

SLAYING THE TROLL: LITIGATION AS AN EFFECTIVE STRATEGY AGAINST PATENT THREATS

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Abstract

Litigation has traditionally been seen as a disfavored option for an accused infringer. Instead, litigation is commonly viewed as an activity that is forced on an unwilling market participant. This article proposes that the threat of litigation is a double-edged sword that affects not just the decision making process of the infringer, but also that of the patentee. The threat of litigation is particularly important when the patentee is a patent troll, counterbalancing the patent troll's ability to force a license and playing a key role in forcing low- or zero-cost settlements. This article first explores the options available to the accused infringer in the face of a patent threat, and defines the concept of a patent troll. It then examines the reasons why an infringer might choose to litigate, and describes a model through which to view the infringer and patentee's decisions. This model is then used to examine how changes in the ability of patentees to obtain injunctions may drive the tendency of parties to litigate and the value of settlements that occur in place of litigation.

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I. INTRODUCTION

Picture yourself as the president of a company that makes widgets. Let's call that company Widgeto. Widgeto began making and selling widgets several years ago, and makes a modest profit. Today, however, you received a letter from another company named Trowe Investments, claiming that Widgeto's widgets infringed upon a patent held by Trowe, and asking Widgeto to pay Trowe five dollars for every widget that Widgeto has ever made, and five dollars each time it makes a widget in the future. You've never heard of Trowe before; they are not one of your competitors, and you don't believe that they have any connection to the widget market. What do you do?

In such a situation, a market participant's options are limited: it can attempt to negotiate with the patent holder, participate in the market at risk, avoid the market, or litigate. Each option has associated costs. For instance, choosing to participate in the market comes with the risk of being sued for damages – or even enjoined – while avoiding the market entirely results in forgoing significant opportunity costs. Negotiating generally involves the payment of a royalty or other compensation to the patentee. The final option, litigation, has typically been regarded as the province of the patent holder, rather than the infringer, since litigation is the enforcement mechanism by which a patentee can extract revenue from an infringer.

An infringer's options are even more limited when the threat comes from a patent troll. Patent trolls – entities who neither develop new technologies nor participate directly in the market, but instead acquire patent rights solely for the purpose of obtaining a revenue stream – have become a major threat to market participants. By its very nature, a patent troll has the ability to assert a patent against an established market participant while avoiding any serious risk to itself.¹ Yet, a patent troll is rarely interested in litigating for the sake of litigating – rather, it seeks to use its patent to obtain a revenue stream in the form of licensing payments.² Thus, a patent troll will commonly offer an accused infringer some price at which it is willing to make the threat of litigation vanish.³

1. As discussed more fully in section III, because a patent troll's only assets are its patents, a troll rarely runs the risk of being countersued by a competitor.

2. See Jeremiah Chan and Matthew Fawcett, *Footsteps of the Patent Troll*, 10 INTEL. PROP. L. BULL. 1, 3 (2005).

3. See, e.g., Joseph Farrell and Robert P. Merges, *Incentives to Challenge and Defend Patents: Why Litigation Won't Reliably Fix Patent Office Errors and Why Administrative patent Review Might Help*, 19 BERKELEY TECH. L.J. 943, 953-54 (2004).

When the patent threat comes from such an entity, it would seem that litigation places all power in the hands of the patent troll. Professors Farrell and Merges, for example, have described challenger-patentee litigation as containing a slew of misbalanced incentives, both against challenging the patent in the first place, and in favor of the patentee during the litigation itself.⁴ This suggests that litigation is a weapon that resides primarily in the hands of the patentee, and can be used to force a settlement price that the infringer must accept.⁵ The discounted value of an infringer's willingness to challenge a patent has prompted numerous calls for non-litigation solutions for improving patent quality, such as post-grant reviews and modified property regimes for patent ownership.⁶

Looking beyond the potential settlement price that the infringer cannot refuse, however, reveals a number of benefits that the infringer can obtain if it litigates – benefits that are augmented when the patentee is a troll. For instance, an infringer may be able to fix the claim scope in such a way that it becomes easier to design around the patentee's patent, thus eliminating the possibility of future royalties. Tactical benefits may also flow from initiating litigation against the patentee. At the same time, there are costs to the infringer of not litigating – most notably, the fact that other patent trolls may take the infringer's wish to license the patent as an invitation to feast.

Nor are the reasons for litigating limited to the effects of the litigation on the infringer. Litigation also has negative effects on the patentee. One such effect is the cost of the litigation itself, something that may drive down the patent troll's settlement price. More importantly, however, is the fact that through litigation, an infringer places the patent troll's most important asset – its patent – at risk. Professors Farrell and Merges have demonstrated that the possibility of losing its patent greatly incentivizes a patentee to win litigation.⁷

4. *Id.* at 968.

5. *See id.* at 952-60.

6. The most common proposal for improving patent quality is the creation of some form of post-grant review. There are numerous examples of such systems. *See, e.g.,* Farrell and Merges, *supra* note 3, at 964-68; Qin Shi, *Reexamination, Opposition, or Litigation? Legislative Efforts to Create a Post-Grant Patent Quality Control System*, 31 AIPLA Q.J. 433, 451-62 (2003); David G. Barker, *Troll or No Troll? Policing Patent Usage with an Open Post-Grant Review*, 2005 DUKE L. & TECH. REV. 9, 19-41 (2005). An alternative proposal for addressing the problem of patent trolls is the creation of a "patent investment trust," modeled on the concept of a Real Estate Investment Trust ("REIT"). *See* Elizabeth D. Ferrill, *Patent Investment Trusts: Let's Build a PIT to Catch the Patent Trolls*, 6 N.C. J.L. & TECH. 367, 383-87 (2005) [hereinafter Ferrill, *Patent Investment Trusts*].

7. *See* Farrell and Merges, *supra* note 3, at 952.

This is especially true when the patentee is a troll, whose *only* asset is its patent. By litigating, an infringer places this value at issue, forcing it to affect the troll's settlement price.

These factors demonstrate that litigation can be a powerful tool in the hand of an infringer, who can use that threat to force a lower (or zero) value settlement price. These effects can be further seen by reference to a settlement model. Such a model provides a deeper understanding of when the threat of litigation can drive the settlement price down, and when an infringer will litigate against a patent troll. In its simplest form, the model establishes that the infringer and troll's settlement prices are dependant on separate factors, and can move independently; that there are reasons why a patentee would *not* want to litigate against a small infringer; and that when the consequences of not litigating are taken into account, settlement may become unlikely or impossible.

This article first sets forth four options available to an infringer when faced with a patent threat. It then defines the concept of a "patent troll," as distinguished from innovators and producers. Given this understanding of patent trolls, I offer a number of reasons why litigation may be beneficial to the infringer. I next describe a model to evaluate how these factors can affect the amount and likelihood of settlement versus litigation when threatened by a patent troll, and illustrate how changes in the ability of patent trolls to obtain injunctions may affect these outcomes.

II. OPTIONS AVAILABLE TO THREATENED INFRINGERS

When faced with a patent threat, a firm has four options: bear the risk of enforcement litigation, negotiate, avoid the market, or litigate.⁸ Each carries its own advantages and disadvantages. One possibility is to simply bear the risk of the patent threat and enter – or remain in – the market, despite the existence of a patent threat. Often times, the firm views the patent threat as not credible, or unlikely. In the context of a patent held by a competitor, both firms may hold patents that arguably cover each other's products.⁹ In that case it is frequently to

8. I use the term "patentee" to refer to the entity that can assert rights under a patent. In many cases, this is the party to whom the patent has been formally assigned. Thus, the patentee does not need to be the inventor, and in many cases the patentee is, in fact, a completely separate entity. In contrast, the term "infringer" refers to any threatened firm – whether it actually infringes the patentee's patent is irrelevant to this analysis. All that needs to exist is the *potential* to be found to infringe the patent.

9. See Mark A. Lemley, *Rational Ignorance at the Patent Office*, 95 NW. U. L. REV. 1495, 1505-05 (2001).

neither party's advantage to assert its patents against the other. Instead, a standstill exists, where both parties participate in the market as if neither held patents.¹⁰

A second course of action for the potential infringer is to negotiate. Typically, negotiation results in the infringer obtaining a license that requires the payment of a flat fee, royalties, or both to the patentee. Regardless of the form, some type of monetary payment is generally made from the infringer to the patentee.¹¹

Alternatively, an infringer may choose to avoid the market entirely, thus sidestepping the patent threat. This decision, however, comes with the opportunity cost of not participating in the market. In addition, a firm's ability to refuse to participate can be limited depending on how invested in the market the infringer is already. And an infringer may still be liable for damages if it has operated under the shadow of the patent for any period of time.¹²

The fourth option, litigation, traditionally has been viewed as the province of the patent holder. In many cases, the mere threat of litigation may allow the patent holder to achieve its goal – especially when that goal is to force a license of its patent. Moreover, the patentee, rather than the infringer, generally initiates litigation.¹³

III. WHAT IS A PATENT TROLL?

According to popular understanding, the term “patent troll” was coined in the late 1990s by Peter Detkin, the assistant general counsel for Intel, to describe “somebody who tries to make a lot of money off a patent that they are not practicing and have no intention of practicing and in most cases never practiced.”¹⁴ Detkin's definition, however, is unsatisfying; it does not, for example, exclude inventors

10. Professor Lemley describes this scenario as a “patent arms race.” *Id.* at 1505.

11. *See id.* at 1505-06.

12. 35 U.S.C. § 284 (2000) (“Upon finding for the claimant, the court shall award the claimant damages adequate to compensate for the infringement but in no event less than a reasonable royalty for the use made of the invention by the infringer.”).

13. This can be demonstrated by looking at what percentage of patent actions are brought by the accused infringer. In one sample, for example, only 168 out of 1,209 tried cases were declaratory judgment actions brought by the infringer. The remaining 86% were presumably brought by the patentee. *See* Kimberly Moore, *Forum Shopping in Patent Cases: Does Geographic Choice Affect Innovation*, 79 N.C. L. REV. 889, 921 (2001).

14. Ferrill, *Patent Investment Trusts*, *supra* note 6, at 367; *See also* “Patent troll,” available at http://en.wikipedia.org/wiki/Patent_troll; Brenda Sandburg, *Inventor's Lawyer Makes a Pile from Patents*, *The Recorder*, July 30, 2001, LEXIS Nexis Library, RECRDR File.

who develop new technologies but due to limited resources or various business reasons, do not practice their patent.¹⁵

Since the term was coined, various commentators have sought to pin down a meaning. Following the spirit of Detkin's original definition, some have attempted to define patent trolls by their behavior towards actual market participants, noting that patent trolls "obtain patents, not to make, use, or sell new products and technologies, but solely to force third parties to purchase licenses."¹⁶ Others have characterized patent trolls as "speculators" who "engage in what is more accurately termed opportunistic licensing."¹⁷ In most cases, however, the derisive tone of Detkin's original definition has been maintained; calling a company a "patent troll" is frequently seen as an insult, and can actually be excluded from litigation.¹⁸

Despite the difficulty of defining exactly what a patent troll is, it appears clear from contemporary definitions that a patent troll is an entity that neither develops novel technologies nor uses those technologies to provide goods or services to the market. Rather, a patent troll acquires patents for the sole purpose of using them to obtain a revenue stream from a firm that engages in activities arguably falling within the scope of the patent. Typically, the troll will acquire the patent at a relatively low cost from an innovator, although some trolls may obtain their patents in-house.¹⁹ In this way, a patent troll acts as a speculator, paying for patent rights based on the hope that, in the future, it will be able to use the patent to obtain a higher reward.

At the most basic level, patentees can be divided into three categories: innovators, producers, and rent seekers. These three categories are not mutually exclusive; a firm can exhibit one, two, or even all three behaviors. Innovators are entities that create new technologies and obtain patents on them. They may be individual

15. eBay, Inc. v. MercExchange, L.L.C., 126 S.Ct. 1837, 1840 (2006).

16. See e.g., Jeremiah Chan and Mathew Fawcett, *Footsteps of the Patent Troll*, 10 INTELL. PROP. L. BULL. 1, 1 (Fall 2005).

17. Ferrill, *Patent Investment Trusts*, *supra* note 6, at 375.

18. See Rambus Inc.'s Motion *In Limine* No. 1 to Preclude Use of Derogatory Characterizations of Patents and Patentholders, Hyundai Electronics, et al v. Rambus, Inc., No. CV 00-20905 RMW (N.D. Cal. July 20, 2006) (moving to exclude the use of the term "patent troll" as unduly prejudicial).

19. For instance, MercExchange, an entity sometimes described as a patent troll, developed its patents internally, obtaining the first in the late 1990's. See Ellen McCarthy, *Waiting Out A Patent Fight With EBay*, Washington Post, Jan. 6, 2005, at E01, available at <http://www.washingtonpost.com/wp-dyn/articles/A51969-2005Jan5.html>.

inventors, universities, or companies. Producers²⁰ are firms that practice a patent in the market covered by their patent. Typically, they acquire patents for one of two reasons: to assert them against competitors, thereby gaining a competitive advantage, or to defend against a patent suit brought against a competitor.

The third category, rent seekers, consists of entities that utilize the patent to obtain licensing revenue. This category encompasses, but is not limited to, what are typically described as “patent trolls,” “non-practicing entities,” or “patent enforcement and holding companies.” Commentators have described these entities in a number of ways, primarily focusing on their behavioral patterns. For instance, Professor Landers has referred to them as “Companies that do not produce products, but simply acquire patents to obtain licensing revenue.”²¹ Such companies “are compared to “terrorists that “threaten legitimate innovators and producers” and are cited as examples of a “disturbing trend.”²² One primary behavioral attribute of a patent troll is its ultimate goal of licensing its patent. A patent troll thus “purchas[es] a patent for the sole purpose of receiving licensing fees.”²³

Of course, not every acquirer-enforcer is a patent troll, nor is every patent rent-seeker engaging in trolling.²⁴ The non-patent related behavior of the patent holder plays a critical role in assessing whether it is a troll. Typically, to be a patent troll a firm must have no intent to actually practice the patent. Thus patent trolls have been described as “individuals or companies that buy up patents and assert them with no intent ever to create a product,”²⁵ obtaining patents “not to make, use, or sell new products and technologies, but solely to force third parties to purchase licenses.”²⁶

At the same time, patent trolls are not merely acquirer-enforcers. Another characteristic of patent trolls is their acquisition and

20. The term “producer” to refer to entities that actually practice the patent, regardless of whether they manufacture a product. Another commonly used term is “practicing entity.”

21. Amy Landers, *Let the Games Begin: Incentives to Innovation in the New Economy of Intellectual Property Law*, 46 SANTA CLARA L. REV. 307, 345 (2006).

22. *Id.*

23. Barker, *supra* note 6, at 2.

24. *Id.* at 16 (“The cotton gin and other similar examples show why there should be no blanket rule that one person cannot acquire and enforce another’s patent. Not every patent acquirer who enforces a patent is a patent troll.”).

25. Katherine E. White, *Preserving the Patent Process to Incentivize Innovation in Global Economy*, 2006 SYRACUSE SCI. & TECH. L. REP. 1, 1 (2006).

26. Chan and Fawcett, *supra* note 2, at 1.

enforcement of older patents on newer products.²⁷ This behavior is termed “opportunistic licensing,” in which patent trolls acquire older patents, which they aggressively enforce when another party develops a product arguably covered by the patent.²⁸ This “troll like” behavior can be compared to the classic tale of the billy goats gruff, where the patentee waits beneath the bridge to spring up onto the unsuspecting infringer.²⁹

Finally, a patent troll makes heavy use of the threat of litigation – and the threat of an injunction – to force a license of its patent.³⁰ In order to make that threat a viable one, patent trolls often do, in fact, engage in litigation to enforce their patent.³¹ Without the ability to enforce their patent, a patent troll simply has an expensive piece of paper.

It is important to distinguish patent trolling from enforcing “bad” or poor quality patents. This is a common point of confusion.³² “Bad”

27. Ferrill, *Patent Investment Trusts*, *supra* note 6, at 375-76 (stating that patent trolls tend to buy older patents which may have been forgotten or overlooked, and then enforce those patents against makers of relatively new technology).

28. *Id.* Patent trolls “wait for the industry to utilize a patented technology and then enforce their patents on the alleged infringers.” Chan and Fawcett, *supra* note 2, at 1; *see also* Barker, *supra* note 6, at 7. Barker states that:

There are two types of patent trolls: individuals and corporations. An individual patent troll is a patent holder who receives a patent and then secretly waits for another inventor to develop the same technology. When this happens, the troll appears and demands licensing fees for the use of the patented technology. . . . Similarly, corporate patent trolls purchase patents and do not enforce them until the relevant industry has grown up around the patent.

Barker, *supra* note 6, at 7.

29. Robert Merges et. al., *Brief of Amicus Curiae Yahoo! Inc. in Support of Petitioner*, 21 BERKELEY TECH. L.J. 999, 1002 (2006).

30. Ferrill, *Patent Investment Trusts*, *supra* note 6, at 375-76. (“most patent trolls have no plans to practice the patent – they make all their money from licensing, often under threat of litigation.”).

31. Two examples of such firms are NTP and MercExchange, both commonly described as “patent trolls.” These two firms have engaged in high profile patent litigation to enforce their patents. NTP, Inc. v. Research in Motion, Ltd., 392 F.3d 1336, (Fed. Cir. 2004); MercExchange, L.L.C., v. eBay, Inc., 401 F.3d 1323 (Fed. Cir. 2005); *see also*, Ferrill, *Patent Investment Trusts*, *supra* note 6, at 376. (noting that patent trolls are criticized on the grounds that they “clog up the legal system with baseless litigation and bankrupt the manufacturers of technology by demanding unfairly high licensing fees.”).

32. *See* Barker, *supra* note 6, at 8. Barker states that the National Research Council of the National Academies has found that the are four primary effects patent trolls have on innovation and competition are:

(1) In contrast to incentives to genuine innovation, patents on trivial innovations may confer market power or allow firms to use legal resources aggressively as a competitive weapon without consumer benefit. (2) Poor patents could encourage more charges of infringement and litigation, raising transaction costs. (3) The

patents are a commonly recognized problem, and there is significant evidence that such patents deter innovation.³³ However, patent trolls do not necessarily acquire only bad patents; indeed, if patent trolls only held low quality patents, they would be difficult to enforce in actual litigation. This is not the case. There are numerous instances where companies who fall within the category of “patent trolls” prevailed in court and on appeal.³⁴ Moreover, patent trolls often acquire patents from third parties, rather than filing for the patents themselves.³⁵ To the extent poor patents are being issued, the problem is not directly related to patent trolls themselves; rather, the problem lies with the party actually filing for the patent.³⁶ Thus, the concept of “bad” patents and that of patent trolls should be kept separate. While patent trolls may tend to use overlooked or older patents, it is a stretch to say that they are driving the creation of bad patents, or that “patent trolling” is equivalent to enforcing bad patents.³⁷

Patent trolls must also be distinguished from the other two categories of patentees, which are typically seen as desirable: innovators and producers.³⁸ As is commonly recognized, patent trolls are not producers who acquire patents as part of a defensive or

proliferation of low-quality patents in a technology complicates and raises the cost of licensing or avoiding infringement. (4) The uncertainty about the validity of previously issued patents may deter investment in innovation and/or distort its direction.

Id. But National Research Council’s report actually states that these effects relate to the quality of the patents themselves, rather than to patent trolls. NAT’L RES. COUNCIL, A PATENT SYSTEM FOR THE 21ST CENTURY 95 (Stephen A. Merrill et al. eds.) (2004), available at <http://www.nap.edu/html/patentsystem/0309089107.pdf>

33. See, e.g., Farrell and Merges, *supra* note 3, at 946 (noting that “an improper patent is typically an unwarranted burden on consumers and other innovation”).

34. See, e.g., *MercExchange*, 401 F.3d 1323 (holding MercExchange’s patents valid and infringed); *NTP*, 392 F.3d 1336 (affirming the district court’s finding of infringement with respect to some claims, and reversing with respect to others).

35. See Ferrill, *Patent Investment Trusts*, *supra* note 6, at 376 (“First, patent trolls tend to buy older patents, which may have been forgotten or overlooked.”).

36. Of course, the well-publicized financial success of patent trolling may drive more people to file lower quality patents in the future. However, given that patent trolling is a fairly recent phenomenon, and given that the problem of low quality patents is not a recent one, it would appear that the problem of low quality patents is one that exists irregardless of the presence of patent trolls.

37. In addition, while patent trolls may not be directly driving the creation of low quality patents, they may result in a greater enforcement of such patents, thus giving the appearance of more low quality patents.

38. *eBay, Inc. v. MercExchange, L.L.C.*, 126 S.Ct. 1837, 1840 (2006) (discussing self-made inventors and university researchers as patent holders that that “might reasonably prefer to license their patents, rather than undertake efforts to secure the financing necessary to bring their works to market themselves.”).

offensive strategy related to their own product line.³⁹ They are entities that acquire patents covering a market in which they do not participate. Consequently, unlike a producer, a patent troll has no product that can be targeted by a counter-patent suit, thus enabling it to assert its patents without obvious repercussions. Of course, a producer need not actually practice the patent; rather the critical question is whether it is enforcing its patent in a market in which it participates. For instance, a patentee might manufacture a product that can either use a widget or a gadget. The patentee has patents on both widgets and gadgets. However, the patentee decides to use only widgets in its product. While the patentee does not practice the gadget patent, it is not a patent troll. Indeed, even if the patentee chooses to license its gadget patent to competitors, the fact that the patent relates to a market that it participates in characterizes it as a producer, rather than a patent troll.⁴⁰

Differentiating between an innovator and a patent troll is more difficult. A patent troll cannot be distinguished on the ground that it simply acquires patents from other entities, since not all patent trolls follow this strategy.⁴¹ Indeed, some patent trolls develop their own patents internally.⁴² Thus, what distinguishes a patent troll from an innovator is not its method of acquiring patents, but rather the relationship between its patent and the underlying technology. The goal of a patent troll is simply to obtain a patent that it can use to extract licensing revenues. It is not to develop a new technology that can be used by a producer. In other words, the subject matter of a patent troll's patent does not need to have any value independent of the property rights granted by the patent. In contrast, an innovator seeks not just to obtain a patent, but also to create an underlying technology that has some value.

39. See, e.g., Ferrill, *Patent Investment Trusts*, *supra* note 6, at 375.

40. Note that when pre-suit infringement is at issue, a patent troll has a substantial advantage over a producer that is suing to enforce its patent, since in order to recover damages for past infringement, a producer must mark its products with its patent number. See 35 U.S.C. § 287(a) (2000). In contrast, a non-practicing patent holder does not need to have marked any products in order to collect damages for past infringement. See *Wine Ry. Appliance Co. v. Enterprise Ry. Equipment Co.*, 297 U.S. 387, 395 (1936) (holding that section 287 does not apply to situations where there are no products to be marked); see also *Texas Digital Systems, Inc. v. Telegenix, Inc.*, 308 F.3d 1193, 1220 (Fed. Cir. 2002) (reaffirming the conclusion set forth in *Wine Ry.*).

41. One example is that of MercExchange, which developed its own patents internally rather than acquiring them from an outside source. See McCarthy, *supra* note 19.

42. *Id.*

This point can be demonstrated by analogizing the patent to a piece of land. Both the innovator and the patent troll can potentially own the land, thus having the right to exclude others from it. The innovator, however, uses the land to raise a crop. The crop has a value that is independent of the existence of ownership rights in the land. Indeed, even if no property rights system existed, the innovator would still have value while the patent troll would have nothing.⁴³ The patent troll's land may have some value independent of the right to exclude (it may even have a valuable crop); however, that value is irrelevant to the patent troll's goal of extracting value through its right to exclude.

Of course, it can be difficult to evaluate whether a given entity has created technological value independent of the patent rights. As noted at the outset, a single firm can engage in behavior that falls within all three categories: innovation, production, or speculation. However, the fact that a firm produces a product, or engages in innovation, cannot be taken as proof that the firm is not a patent troll. Any firm that acquires patents in an area in which it neither participates in the market nor develops new technologies can potentially be described as engaging in "trolling." Indeed, even though a firm may have exposure to patent counterattacks in one market does not prevent that firm from engaging as an unfettered patent troll in another, because the firms against whom it is asserting its patents will not necessarily have patents to use against the patentee's own products. That said, the most dangerous type of patent troll is a troll without any product line at all – in other words, a firm against whom it is impossible to assert patents as a defense. As discussed in the next section, however, despite the inability to counter-sue on an alleged infringer's own patents, it can actually be to the threatened infringer's advantage to litigate against the patent troll.

IV. WHY WOULD INFRINGERS WANT TO LITIGATE AGAINST PATENT TROLLS?

Section II set forth four options available to a market participant when faced with a patent threat: negotiate, leave the market, participate in the market at risk, or litigate. Because of the way a patent troll acts, by enforcing patents against developed markets, choosing not to participate in the market is rarely a viable option. A firm will typically already have substantial sunk costs, and the

43. Obviously, this assumes that no one can simply steal the innovator's crop.

patentee will also be seeking damages for past activity. Likewise, since a patent troll's goal is to extract revenue from the infringer, it is unlikely that it would take no action if the infringer were to remain in the market at risk. This is in contrast with a patent held by a practicing entity that may choose not to assert the patent for a variety of reasons.⁴⁴ This leaves two options: negotiate or litigate. When faced with this quandary, initiating litigation may be the optimal strategy, both because of certain advantages that an accused infringer can gain via litigation, as well as the economic benefits of this strategy. Many of these benefits have special weight when the patentee is a troll.

At first glance, there appears to be no reason why a threatened infringer would want to initiate litigation against a patent troll. If the infringer is successful, its competitors will capture a majority of the value of the infringer's success. For instance, if an infringer succeeds in having a patent held invalid, that patent will be invalid with respect to all other potential infringers – even if it did not participate in the litigation.⁴⁵ Thus, although the firm will pay the costs of the litigation, it will only reap a fraction of the benefit. This appears to create a first mover problem – if you can reap the benefits without incurring any of the costs, why initiate litigation?

However, a closer examination reveals a number of reasons why an infringer may choose to litigate. For instance, a first mover may be able to derive substantial advantages from litigating early, such as claim fixing, which may not be available to it if it delays. In addition, while a successful infringer may be limited to only the value it can extract from the market in the absence of the patent, rather than the full value of the patent itself, by holding the patentee's patent hostage via invalidity arguments, an accused infringer may be able to capture more than the value that would be available to it via a simple victory.

These factors are amplified when the patentee is a patent troll. Many of the benefits that can be obtained by the accused infringer if it initiates litigation, such as claim fixing, may have greater weight in the context of a patent troll. Moreover, because the patent troll's primary asset – the patent – is the very thing being litigated, an accused infringer may be able to obtain more value from the patentee

44. Such reasons include the existence of a patent "arms race" described by Professor Lemley. *See* Lemley, *supra* note 9, at 1504.

45. *See* *Blonder-Tongue Labs., Inc. v. University of Illinois Found.*, 402 U.S. 313 (1971) (holding that a patentee is estopped from asserting that a patent is valid if there was a prior determination of patent invalidity unless the patentee demonstrates that it was denied a full and fair opportunity to litigate in the first action).

than it would be able to obtain by negotiating a license or remaining in the market at risk.

A. *The Benefits of Litigating*

While much of the focus of patent litigation is on whether the patentee will be able to extract some form of revenue out of the accused infringer, there are a number of collateral benefits that the infringer may be able to derive from litigation. For example, through litigation an infringer may be able to establish a more definite claim scope that would make design-around attempts easier. An infringer may also be able to gain more information about its opponent's position, thus improving its attempts to determine a beneficial settlement price. And in the event that an infringer is able to initiate litigation, it can gain tactical benefits from being able to choose the forum. Each of these factors may provide an infringer with a reason to choose to litigate.

1. Fixing Claim Scope

One benefit of litigation to the infringer is the ability to “fix” the meaning of claims or claim terms, something that can make design-around significantly easier. By locking patent claims into a single, fixed meaning via court decisions and issue preclusion, an accused infringer can create a fixed patent scope that it can design around. This benefit will become even greater as it becomes harder to use continuation applications to draft claims that read on to a new product.⁴⁶

The first step in assessing whether a given product or process infringes a patent claim is to ascertain the scope of that claim. The words of the claims themselves set out the “metes and bounds” of that which is claimed.⁴⁷ The specific “territory” that is contained within

46. Prior to 1995, for example, the length of the term for a given patent depended on the date of issuance of the patent. This was true even for continuation applications filed years after the application to which that continuation claimed priority. In 1995, however, the statutory patent length was adjusted and is now based on the priority date, rather than the date of issuance for all subsequent patent applications. This change made behavior such as Lemelson's famous patent submarining much more difficult for all patents claiming priority to a post-1995 application. See 35 U.S.C. § 154 (2000); Jeffrey D. Sullivan and David Loretto, *Symbol Technologies v. Lemelson, Prosecution Laches, and the Still-Unmet Challenges of Junking “Junk Patents,”* 33 AIPLA Q.J. 285, n.50 (2005). For further discussion of this issue, see Kimberly A. Moore and Mark Lemley, *Ending Abuse of Patent Continuations*, 84 BOSTON U. L. REV. 63 (2004).

47. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (“It is a ‘bedrock principle’ of patent law that ‘the claims of a patent define the invention to which the

this interpretation is called the literal claim scope.⁴⁸ Any product or process that falls within the literal claim scope can be said to literally infringe; thus, this is typically the first level of analysis when performing an infringement analysis.⁴⁹ It is also the first analysis that would be performed by a firm that intended to design around the patent.

Ascertaining the literal claim scope is often not a simple matter. Because the words of the claim determine the scope, the specific meaning of those words is very important. Moreover, words can have a variety of meanings – even non-technical words. Take, for instance, the following patent claim:

A method for enabling a user of an electronic multi-function card to select data from a plurality of data sources such as credit cards, check cards, customer cards, identity cards, documents, keys, access information and master keys comprising the steps of:

transferring a data set from each of the plurality of data sources to the multi-function **card**;

storing said transferred data set from each of the plurality of data sources in the multi-function **card**;

assigning a secret code to activate the multi-function **card**;

entering said secret code into the multi-function **card** to activate the same;

selecting with said activated multi-function **card** a select one of said data sets; and

displaying on the multi-function **card** in at least one predetermined display area the data of said selected data set.⁵⁰

It is unclear precisely what is meant by the term “card” in this claim. Is it a card like a credit card? Something larger? Does it need to be made out of any particular material? Simply looking at the word in context does not answer these questions; indeed, the claim could even refer to a computer card, of the type used in a desktop

patentee is entitled the right to exclude.” (quoting *Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1115 (Fed. Cir. 2004)).

48. See, e.g., *Atlas Powder Co. v. E.I. du Pont & Co.*, 750 F.2d 1569, 1579 (Fed. Cir. 1984) (“If properly construed claims read on the infringing product, there is literal infringement.”).

49. See *id.*

50. U.S. Patent No. 5,276,311 Claim 1 (filed July 1, 1992) [hereinafter the ‘311 patent] (emphasis added).

computer.⁵¹ The ordinary meaning of the term is a relevant consideration, but so is the specification.⁵² In this case, the specification suggests that an aspect of the invention is “electronic storages in a card-like very flat housing.”⁵³ This phrase does not provide significant assistance in interpreting the claim term.

Further confounding the issue of claim scope is disagreement among reasonable people over the meaning of claim terms. For instance, when this claim was interpreted in *E-Pass Technologies v. 3Com Corp.*, the district court determined that the term meant “[a] device having the width and outer dimensions of a standard credit card with an embedded electronic circuit allowing for the conversion of the card to the form and function of at least two different single-purpose cards.”⁵⁴ On appeal, the Federal Circuit disagreed, instead concluding that the term “card,” as used in the ‘311 patent, referred simply to “a flat rectangular piece of stiff material.”⁵⁵ The claim element at issue in *E-Pass* is merely one example of the uncertainty inherent in attempting to ascertain the meaning of patent claims. And where there is uncertainty in the meaning of claim terms, it may be difficult or impossible to assess the full literal scope of the claims.

To be sure, there are rules for interpreting claim language. When interpreting claims, one must always start with the language of the claims themselves, and the context they provide to the claim terms.⁵⁶ The claims are interpreted according to their “ordinary and customary meaning,” that is to say, “the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention.”⁵⁷ That person is considered to have read the claim term in the context of the patent specification and prosecution history.⁵⁸ While it is inappropriate to interpret the claim terms in light of the accused device, “knowledge of that product or process provides meaningful context for the first step of the infringement analysis,

51. See, e.g.

http://shop2.outpost.com/product/3506224?site=sr:SEARCH:MAIN_RSLT_PG (last visited August 14, 2006) (copy on file with author) (offering for sale a PPA IEEE1394 PCI memory storage card designed to be placed inside a desktop computer).

52. *Phillips*, 415 F.3d at 1313.

53. ‘311 patent *supra* note 50, at col.2, l.24-25.

54. *E-Pass Techs v. 3Com Corp.*, 177 F. Supp. 2d 1033, 1043 (N.D. Cal. 2001).

55. *E-Pass Techs. v. 3Com Corp.*, 343 F.3d 1364, 1370-71 (Fed. Cir. 2003).

56. *Phillips*, 415 F.3d at 1312.

57. *Id.* at 1313.

58. *Biagro Western Sales, Inc. v. Grow More, Inc.*, 423 F.3d 1296, 1302 (Fed. Cir. 2005).

claim construction.”⁵⁹ These rules, however, provide only a general framework for interpreting claim terms – determining the scope of a particular claim depends heavily on the particular circumstances of the patent and the technology of the patent.

Because of this uncertainty in assessing the scope of a given claim, or set of claims, any mechanism by which an infringer can pin down the boundaries of a patent claim can assist in designing around that claim. Once a patent claim has been litigated, and an infringement determination made, the patentee will necessarily be locked into certain meanings under two doctrines: issue preclusion and preclusion of inconsistent positions.⁶⁰

Issue preclusion operates when a court has settled a factual issue after a trial in which the issue was fully and fairly litigated. It requires that four elements be met: the issues precluded are the same as those involved in the prior litigation; that the issues were actually litigated; that the determination of those issues was “essential” to the prior judgment; and that the party precluded had a full and fair opportunity to litigate the issues.⁶¹ In the context of claim construction, a patentee can be precluded if the determination of scope was essential to a final judgment on either the question of validity or infringement.⁶² In the post-litigation scenario where design-around is most likely to arise – a holding of both infringement and non-invalidity – the claim construction finding may meet the factor that it be essential to a final judgment.⁶³

Estoppel based on the doctrine of inconsistent positions may also apply to prevent a patentee from modifying its claim construction for subsequent litigations. As articulated in *Hybritech v. Abbott Laboratories*, a patent holder may be precluded from taking a position in a subsequent action inconsistent with a position in a prior action, unless the opposing party fails to demonstrate either “(1) personal reliance on the decision granted in the prior suit, (2) prejudice to its litigation of the issues in the present suit by reason of the decision in the prior suit, or (3) the patent holder’s apparent misuse of the

59. *Wilson Sporting Goods Co. v. Hillerich & Bradsby Co.*, 442 F.3d 1322, 1326-27 (Fed. Cir. 2006).

60. *Jackson Jordon, Inc. v. Plasser Am. Corp.*, 747 F.2d 1567, 1575 (Fed. Cir. 1984).

61. *Comair Rotron, Inc. v. Nippon Densan Corp.*, 49 F.3d 1535, 1537 (Fed. Cir. 1995).

62. *A.B. Dick Co. v. Burroughs Corp.*, 713 F.2d 700, 700 (Fed. Cir. 1983).

63. *See, e.g., Novartis Pharm. Corp. v. Abbott Labs.*, 375 F.3d 1328 (Fed. Cir. 2004); *Del Mar Avionics, Inc. v. Quinton Instrument Co.*, 836 F.2d 1320 (Fed. Cir. 1987); *Monsanto Co. v. Bayer Bioscience*, 363 F.3d 1235 (Fed. Cir. 2004); *but see Jackson Jordon*, 747 F.2d at 1578 (finding that a prior claim construction was not essential to the final judgment).

court.”⁶⁴ Given that the infringer in the design-around situation posited here would be a repeat player, it would likely be able to demonstrate both reliance and prejudice in subsequent litigations.

Nor are the effects of issue preclusion and the doctrine of inconsistent positions necessarily limited to the literal scope of a claim, they can also affect the scope of the claim under the doctrine of equivalents. The doctrine of equivalents is a legal theory that allows for a patent claim to include devices or methods that do not fall within its literal metes and bounds.⁶⁵ It focuses on whether a particular element of an accused product or process is equivalent to the missing literal element of the claim.⁶⁶ One method of evaluating whether a particular element is an equivalent is the function-way-result test. Under this test, the given element of the accused device is equivalent if it performs substantially the same function, in substantially the same way, to achieve substantially the same result as the missing claim element.⁶⁷ There are limitations on the scope of equivalents, most importantly whether the claim was amended in such a manner as to specifically exclude the equivalent.⁶⁸ In addition, under the “all limitations rule,” each claim limitation must have an equivalent in the accused device. Thus, a standard design-around strategy is to eliminate one or more of the limitations found in the independent claims of a patent – in particular, a functional limitation.⁶⁹

As with fixing the literal scope of the patent claims through litigation, a skilled infringer may also be able to pin down the range of equivalents. For instance, an infringer could force the patentee to define the relevant function of a particular claim element, or the way in which that function is performed. In such a situation, even if infringement under the doctrine of equivalents was actually found, a

64. *Hybritech Inc. v. Abbott Labs.*, 849 F.2d 1446, 1453-54 (Fed. Cir. 1988).

65. *See Warner-Jenkinson Co., Inc. v. Hilton Davis Chemical Co.*, 520 U.S. 17, 21 (1997).

66. *Id.* at 24-25.

67. *Eagle Comtronics, Inc. v. Arrow Commc’n Labs., Inc.*, 305 F.3d 1303, 1315 (Fed. Cir. 2002); *see also Graver Tank & Mfg. Co. v. Linde Air Prods. Co.*, 339 U.S. 605, 608 (1950).

68. *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., Ltd.*, 344 F.3d 1359, 1368-69 (Fed. Cir. 2003).

69. *See* Paul N. Katz and Robert R. Riddle, *Designing Around a United States Patent*, 45 S. TEX. L. REV. 647, 678-79 (2004) (“The all limitations rule leads to the design around strategy of elimination. Applications of the all elements rule in a design around effort involves attempting to eliminate any of the limitations found in the independent claims – especially functional limitations.”). If a patentee can eliminate a functional limitation, they may be able to avoid any finding of equivalency, especially under the “function-way-result” test, since there will be no element that performs the same function.

patentee might nevertheless later be precluded from rearguing the function of the relevant element under the doctrine of issue preclusion or from seeking a broader construction under the doctrine of inconsistent positions.

In short, because the ability to design around a patent claim depends so heavily on the particular scope that is captured by that claim, anything that helps to define that scope will be beneficial to the firm attempting the design around.⁷⁰ Litigation, through the doctrines of issue preclusion and inconsistent position, may assist in providing additional stabilization to patent claims, thus aiding a firm's ability to design around those claims.

2. Tactical Benefits

While the option to file a declaratory judgment action is not always one that is available to the infringer, there are strong tactical advantages for doing so. In particular, the ability to select the geographic location where the litigation will take place can provide a significant advantage. Selecting the forum may enable the infringer to gain a home court advantage, providing benefits from those that are as minor as minimizing travel to those as significant as a sympathetic jury. As Professor Kimberly Moore has demonstrated, in cases where the infringer was able to choose the forum by initiating litigation, the infringer has a substantially higher chance of winning.⁷¹

In examining win rates for tried cases, Moore found that 14% of the 1,209 tried cases were declaratory judgment actions brought by an infringer.⁷² When the infringer selected the forum, the patentee won a mere 44% of tried cases; in contrast, when the patentee selected the forum, it won 58% of the time.⁷³ Moore further demonstrated that this difference was not due to the theory that declaratory judgment suits as a whole are stronger on the merits than suits brought by patentees; instead, this difference appeared to be solely due to who chose the forum.⁷⁴

Other strategic benefits can be obtained by forcing litigation early. For instance, the patent local rules of the Northern District of

70. See *id.* at 684 (suggesting that firms seeking to design around a patent engage outside patent counsel in order to aid in determining what is required to properly design around the patented invention).

71. Moore, *supra* note 13, at 920.

72. *Id.* at 921.

73. *Id.*

74. *Id.* at 922-23 n.114.

California set forth a short timetable for exchanging contentions and documents in patent litigation. Under those rules, the patentee must provide its preliminary infringement contentions within a mere 10 days after the initial case management conference; along with those contentions they must also produce a host of documents bearing on invention and validity.⁷⁵ While this deadline may not be put into practice on a regular basis, an aggressive infringer may be able to use it to its advantage – especially if it is already prepared to meet its own obligations under those local rules.⁷⁶

These tactical advantages can provide a strong motivation to an infringer to initiate litigation, if it can do so by filing a declaratory judgment action. Of course, an infringer's ability to file such an action depends on the particular circumstances of its situation – some infringers may be able to file a declaratory judgment action, while others may not.⁷⁷ Moreover, an action for declaratory judgment will likely bring a counter-action filed by the patentee in a district of *its* own choosing, a risk that the prudent infringer would need to take into account when filing for declaratory relief.

3. For Informational Purposes

An accused infringer can gain significant information about the validity and enforceability of a patentee's patents via litigation discovery. This additional information will increase the accuracy of the assessment of the threat posed by the patentee. Similarly, the infringer can provide information about the strength of its own case via discovery.

Information asymmetry refers to a situation where each party has different information about the other party's position. Such asymmetry can affect the firms' behaviors and strategic decisions.⁷⁸ For instance, take the simple case of a patentee who knows that a particular piece of prior art poses a significant threat of anticipation or obviousness to its patent claims, while the infringer is unaware of this piece of prior art. In such a situation, an appropriately phrased discovery request may reveal the existence of such a document. Even more extreme is the situation of inequitable conduct. In nearly all

75. Patent Local Rules of the Northern District of California, 3-1 and 3-2.

76. *See id.* at 3-3 and 3-4.

77. For instance, in order to file an action under the Declaratory Judgment Act, the plaintiff must have a reasonable apprehension of suit. *See infra* section V.C.

78. *See* DOUGLAS G. BAIRD, ROBERT H. GERNER, AND RANDAL C. PICKER, *GAME THEORY AND THE LAW* 123 (1994).

situations, an infringer is unlikely to learn of inequitable conduct outside the litigation context, since inequitable conduct involves information that is internal to the patentee.⁷⁹ Litigation discovery may thus provide a valuable tool for curing this informational asymmetry and increasing the strength of the infringer's position.⁸⁰

In addition, litigation discovery forces the patentee to lay out their position with regard to the scope of their claims, thus providing the infringer with information about the strength of the patentee's position. And, as noted in section IV.A, the patentee may be precluded from taking a different position in later litigation based on statements made in earlier litigation. Rules such as those adopted by the Northern District of California explicitly outline the information that each party is required to provide the other.⁸¹ The infringer can use this information to further evaluate its position with respect to the patent.

There is a down side to curing the information asymmetry, of course, as discovery is a two way street. Just as the infringer may gain additional information about the validity and enforceability of the patents, the patentee will be able to gain additional information about the infringer's own behavior. Nevertheless, if the infringer's product is public, and the patentee is already able to make an infringement assessment based on that product, independent of any additional discovery, the benefits of curing the information asymmetry may substantially outweigh the detriments.

4. The Silver Lining of a Validity Finding

Finally, the possibility that the infringer will prevail based on a finding of noninfringement while the patentee prevails on the issue of validity, raises the potential for the infringer to actually gain a positive benefit from the litigation (rather than simply avoiding the cost of a license). Under this outcome, the patent is still in place, and while the patentee can no longer assert it against the infringer, it can

79. See, e.g., Shashank Upadhye, *Liar Liar Pants on Fire: Towards a Narrow Construction for Inequitable Conduct as Applied to the Prosecution of Medical Device and Drug Patent Applications*, 72 UMKC L. REV. 669, 673-76 (2004) (describing the patentee's incentives to engage in inequitable conduct to be based, in part, on the belief that such activities would not be known to the public at large).

80. Of course, discovery is not a transparent window through which an infringer can view all of the patentee's information; defenses of privilege may be used to shield critical documents, for instance.

81. See, e.g., Patent Local Rule 3-1, "Disclosure of Asserted Claims and Preliminary Infringement Contentions," Northern District of California Patent Local Rules.

still be asserted against the infringer's competitors, forcing them to either pay for a license, or litigate the patent. If an accused infringer succeeds in winning a noninfringement challenge, they will be free to market their own product. However, competitors, whose products may exhibit some differences, may not be able to rely on the same noninfringement finding, and the patentee may be able to threaten them with the patent.⁸² Thus, the litigator-infringer gains the benefit of freedom to operate without a license, while its competitors may not. This can create a positive benefit for the patentee.⁸³

These differences in outcome can be summarized as follows. If the patentee wins a validity challenge, the patentee gains small, and the infringer loses small. If the infringer wins, the patentee loses big, and the infringer gains small. In contrast, if the patentee wins an infringement challenge, the patentee wins small and the infringer loses small. If the infringer wins, however, the patentee wins larger than they would have won if they had won the invalidity challenge, and the infringer loses smaller than they would have lost in the invalidity loss. The following outcomes chart illustrates this:

		Infringement	
		Noninfringement	Infringement
Validity	No invalidity	-10, 5	10, -10
	Invalidity	-100, 0	-100, 0

In this chart, the results of each possible outcome are displayed in the box under, or to the right of, that possibility. The value placed on that outcome by the patentee is listed first, and the infringer second. For example, the value of an outcome where there is a finding of both noninfringement and invalidity is -100 to the patentee (since it will have lost the patent) and 0 for the infringer (since it will not be required to pay any damages due to the patent having been found invalid and not infringed).

82. While issue preclusion can operate to bar a patentee's suit against other infringers based on a patent that has been found to be invalid, it does not necessarily do so when there has been a finding of noninfringement. *See, e.g., Comair Rotron, Inc. v. Nippon Densan Corp.*, 49 F.3d 1535, 1539 (Fed. Cir. 1995).

83. This benefit is independent of the benefit that a successful infringer would receive under a system such as that proposed by professor Miller, in which a challenger that defeats a patent receives a litigation-stage bounty. *See generally* Joseph Scott Miller, *Building a Better Bounty: Litigation-Stage Rewards for Defeating Patents*, 19 BERKELEY TECH. L.J. 667 (2004).

The numbers in this example reflect one possibility of differences in outcomes.⁸⁴ As one can see, the only positive payoff available to the patentee through litigation is if there is a finding of no invalidity and infringement. In contrast, the infringer will receive a positive payoff either if the patent is declared invalid, or if they are found not to infringe. This game also demonstrates why the patent troll may be disincentivized to enter the litigation. If the patentee wins, the payoff is only modest. If the patentee loses, however, the penalty ranges from moderately severe to extremely severe, depending on the form of the loss.

B. The Cost to the Infringer of Not Litigating

While the infringer may be able to avoid paying the final cost of losing litigation by settling, there is another cost that must be taken into account – that of choosing not to litigate. In particular, an infringer's decision to not litigate shouts to the world that it is vulnerable, and that it is willing to pay off other potential trolls. This may result in infringers choosing to litigate, even when the cost of doing so equals the amount demanded by the troll.

One method for describing why an infringer would not want to convey the image of an entity that is not willing to litigate is the concept of signaling. Signaling is the process by which one party conveys non-verifiable information to another party through the actions it takes.⁸⁵ Signaling occurs when those with nonverifiable information convey that information by the actions they choose.⁸⁶ For instance, obtaining a patent portfolio may send a signal that a firm is an innovative firm.⁸⁷ In this section, I suggest that regardless of the infringer's propensity to litigate or desire to license, rational infringers will be driven towards litigation due to the signaling results of not litigating.

So how does signaling influence infringer behavior towards litigation? Consider the situation of two types of infringers: litigious

84. In this example, the patentees place a high value on the loss of their patent (-100). Given the issues discussed in section IV.D, however, that need not necessarily be the case – indeed, a patentee might place a significantly lower value on a single patent. In such a situation, a patentee might be more willing to risk litigation, because they would have less to lose; on the flip side, their incentive to win the litigation might be low. In other words, if the patentee has a high cost if they lose, they will not be willing to litigate, while if the cost of losing is low, they will not necessarily have a greater incentive than the infringer to win.

85. Baird et. al., *supra* note 78, at 123.

86. *Id.*

87. See Clarissa Long, *Patent Signals*, 69 U. CHI. L. REV. 625, 659-60 (2002).

infringers and non-litigious infringers. Litigious infringers like to litigate; non-litigious infringers prefer to license.⁸⁸ If the patentee offers a license that is equal to the cost to the infringer of litigating, the litigious infringer will litigate 90% of the time, and will license the patent 10% of the time. In contrast, when the litigation cost is the same as the license cost, the non-litigious infringer will litigate only 10% of the time, and will license 90% of the time. A patentee has no way of knowing whether a given infringer is litigious or non-litigious aside from the infringer's actions.

If the infringer litigates, rather than taking a license, the patentee will only gain a small amount, since the litigation costs for the patentee include both the possibility of losing the patent entirely and the actual costs of the litigation, while the return is likely to be relatively small.⁸⁹ In contrast, if the infringer licenses, the patentee will gain a higher return, as the patent will not be jeopardized and the infringer will not need to pay the litigation costs. Moreover, the value of not litigating against an infringer is modest – more than the value of litigating (due to the lack of litigation costs and potential loss of the patent), but less than the amount of a license.

Thus, if the infringer litigates, the patentee knows that there is a 90% chance that the infringer is a litigious infringer. In that situation, the value of seeking a license with the infringer in the future is significantly reduced – since the infringer is more likely to force the patentee to actually litigate, rather than simply paying for a license. In contrast, if the infringer does not litigate, the patentee knows that there is an 82% probability that they will license rather than litigate the next time, and thus would be a good candidate for future licensing attempts.⁹⁰

While this analysis initially suggests that a patentee would want to avoid litigating infringers in the future, and seek out non-litigating

88. A litigious company may be more likely to litigate than a non-litigious company because it has lower costs. For instance, it may create an in-house litigation department to handle litigation. Or it may establish routine document retention policies that will reduce the costs of future litigations. Some companies that are subject to frequent litigation may even hire a law firm that is dedicated to handling all their discovery needs.

89. For a discussion of the costs of litigating to a patentee, see discussion *infra* section IV.C.1.

90. The patentee knows that there is a 90% probability that the infringer is a non-litigious infringer. The next time the non-litigious infringer is threatened by a patentee, they will have a 90% chance of the infringer being a non-litigious infringer, with a 90% chance of licensing (81% chance of licensing), and a 10% chance of the infringer being a litigious infringer, with a 10% chance of licensing (1% chance of licensing). Thus, the patentee can conclude that there is an 82% chance that the infringer will license the next time.

infringers, a closer examination reveals that the result of this behavior is to encourage all infringers to litigate. If an infringer knows *a priori* that future license requests will be discounted if they choose to litigate, they will be more likely to litigate, despite their tendencies in the absence of such knowledge. Thus, regardless of whether it is a litigious or non-litigious infringer, an infringer would litigate, even when the cost differential for litigating versus taking a license is negligible.

There are other considerations to take into account, however. The above scenario assumes two critical pieces of information: that the patentee knows how much the infringer would be willing to pay to avoid litigation, and that the infringer's probability of litigating does not change between the two points.

With regard to the first assumption, the same pooling holds true even when the settlement point for the infringer is unknown to the patentee. For instance, consider two infringers, one with a low settlement point and one with a high settlement point.⁹¹ When offered a license amount falling between the two points, the low-settlement infringer will litigate, while the high-settlement infringer will license. Such a situation would signal to a patentee that the non-litigating infringer has a high license value, while the litigating infringer has a low license value, thus causing it to discount the value of interacting with the litigating infringer in the future. In contrast, the patentee will seek to threaten the high-settlement value infringer with another patent, thus deriving additional revenue. Here, although the propensity of the high settlement value infringer is initially to license, the optimal end position for both types of infringers is the situation where they litigate once, and then are left alone.⁹² However, because the patentee knows that the pool of litigants will include both high and low infringers, it will necessarily need to enforce their patent against both.

The second assumption – that the infringer's position will not change between the two points – is one that cannot be perfectly controlled for. There are certainly factors that could result in the infringer taking different positions between the time it is threatened

91. For a discussion of settlement points, see discussion *infra* section V.A.

92. Note that if the high-settlement infringer's settlement point is sufficiently high to take into account both the current license costs and the future license cost, it may actually be optimal for it to license the patent. In such a scenario, however, the patentee would have vastly undervalued the infringer's settlement point. In addition, knowing that such super-high settlement point infringers exist, patentees will be especially interested in infringers that deviate from the litigation pool, since they may suspect that they fall into this category.

with the first patent, and the time when it is threatened with the second patent. For instance, the two situations would necessarily involve different patents, with different expected levels of success; there could be different products involved, or different potential damages. This noise can reduce the validity of the signaling process.⁹³ Despite this noise, however, the equilibrium still suggests that, on an individual infringer level, infringers will place a higher value on litigation as opposed to licensing.

C. *The Costs to the Patentee of Litigating*

This category encompasses the costs the patentee must pay if it chooses to litigate to enforce its patents. Of particular relevance here is the possibility that a patentee's discovery costs may equal – or exceed – those of the infringer.⁹⁴ For instance, in the context of pharmaceutical products, an infringer may be able to substantially avoid expensive and time-consuming discovery into its own acts, due to the existence of an Abbreviated New Drug Application, or ANDA, while the patentee is faced with much more costly and extensive discovery. Another example of a relatively inexpensive (for the infringer) form of “litigating” is the *ex partes* reexamination. On the other side of the equation, the costs for the patentee may be quite high. For instance, inequitable conduct claims raise the possibility of extensive fact discovery into the patentee's actions, while the massive scale of discovery into electronic documents may increase discovery costs exponentially.

1. Low Costs for Infringers

One situation in which the infringer's discovery costs may be limited, as discussed above, is when infringement is based on the filing of an ANDA. In addition to lowering the outright cost for filing an application to market a drug product, the ANDA system can significantly reduce the discovery costs of an accused infringer.

Under the Federal Food, Drug and Cosmetic Act (“FFDCA”), a company seeking to manufacture a new drug product is required to file a New Drug Application (NDA) with the Federal Food and Drug

93. Long, *supra* note 87, at 660.

94. This section focuses primarily on discovery costs. While there may be other facts that drive total litigation costs, discovery costs have been described as accounting for 50-90% of litigation costs. See Christopher Koa, *Digital or Paper*, NEW JERSEY LAW JOURNAL, April 4, 2005.

Administration (FDA).⁹⁵ Preparing a NDA is a costly and time-consuming process. One of the most time consuming and costly elements of an NDA are the detailed clinical studies of the drug's safety and efficacy.⁹⁶ These clinical studies frequently involve hundreds of subjects, and may cost tens of millions of dollars (or more) *each*.⁹⁷ Prior to the early 1980's, a firm that sought to market a generic version of a drug that was already on the market was required to fulfill the same safety and efficacy requirements as an innovator company marketing a new drug.⁹⁸ Due to the high costs associated with these studies, bringing a generic drug to market was an expensive undertaking. At the same time, because the entry of the generic product would increase the competition in the market, thus driving prices down, the marginal value that the generic company could extract would be much smaller than that of the innovator company.

The Drug Price Competition and Patent Term Restoration Act of 1984 (the "Hatch Waxman Act") created a new option for firms that wanted to market a generic drug product: the ANDA.⁹⁹ Under the changes wrought by the Hatch Waxman Act, a firm seeking to market a generic version of a previously approved drug product can file an ANDA with the FDA.¹⁰⁰ Unlike a NDA, an ANDA simply requires that the drug product be "bioequivalent" to the previously approved drug.¹⁰¹ In order for a drug product to be "bioequivalent" to the product already on the market, the active ingredient must be absorbed at the same rate, and to the same extent, for the generic drug as for the innovator drug.¹⁰²

95. 21 U.S.C. § 355(a) (2000).

96. *Id.* at § 355(b)(1) (2000).

97. Chana R. Schoenberger, *An Alzheimer's Drug Goes on Trial*, March 20, 2000 *available at* http://www.healthdec.com/docs/Forbes_Alzheimers_Drug_Goes_On_Trial.pdf#search=%22pharmaceutical%20testing%20costs%22 (last visited September 7, 2006) (noting that "[a] typical study would take five years and \$110 million for the Phase III trial.").

98. John Fazzio, *Pharmaceutical Patent Settlements: Fault Lines at the Intersection of Intellectual Property and Antitrust Law Require a Return to the Rule of Reason*, 11 J. TECH. L. & POL'Y 1, 6.

99. Pub. L. No. 98-417, 98 Stat. 1585 (1984) (codified at 21 U.S.C. § 355 (2000), 21 U.S.C. 360cc (2002), and 35 U.S.C. §§ 156, 271, 282 (2000)).

100. 21 U.S.C. § 355(j) (2000).

101. *See* § 355(j)(2)(A) (2000).

102. 355(j)(8)(A) (2000). Bioequivalence is typically demonstrated by conducting human clinical studies involving administration of both the brand name reference product and the generic test product. The specific requirements for establishing bioequivalence are set forth in various FDA Guidelines. *See, e.g.*, U.S. Dept. of Health and Human Services Food and Drug

Once an ANDA application is filed, any patentees holding patents covering the drug have 45 days to bring an infringement suit based on the filing of the ANDA.¹⁰³ If a patentee brings suit within this time period, they gain a number of benefits; most notably, an automatic stay is imposed on the approval of the ANDA.¹⁰⁴ While this litigation is focused on the product that the generic ultimately seeks to market, that product will necessarily be described within the ANDA, which by law is required to describe the components and method of manufacturing the product, can easily suffice to answer many questions about a given product.¹⁰⁵ Thus, the majority of the key documents relevant to the question of infringement will be contained in the ANDA itself. Given this situation, an accused infringer may be in a position to satisfy many of its discovery obligations before the litigation begins, thus keeping its discovery costs low in both time and money.

Another method for keeping litigation costs low for the infringer is to request an *ex partes* reexamination from the PTO. While not true adversarial litigation, an *ex partes* reexamination allows the infringer to attack the validity of the troll's patents without incurring high cost or exposing itself to significant risk. The most well publicized example is that of Research in Motion (RIM), producers of the Blackberry device. During the hotly contested patent litigation between RIM and NTP, Inc. (the patent holder), RIM submitted a request for a reexamination of NTP's patents.¹⁰⁶ RIM hoped, by virtue of the reexamination, to have the patents declared invalid – despite the fact that a jury had just rendered a verdict against RIM based on those same patents.¹⁰⁷

A request for an *ex partes* reexamination may be filed by anyone, at any time.¹⁰⁸ The basis for the reexamination is typically

Administration, *Statistical Approaches to Establishing Bioequivalence*, (2001), available at <http://www.fda.gov/Cder/guidance/3616fnl.pdf>.

103. The NDA must include a list of patents that claim the drug. 21 U.S.C. § 355(b)(1). If the NDA is approved, the FDA publishes a listing of the drug and patents on the drug in the *Approved Drug Products with Therapeutic Equivalence Evaluations*, or “Orange Book.” See 21 C.F.R. § 314.53(e) (2001).

104. 21 U.S.C. § 355(j)(4)(A) (1994).

105. See 21 C.F.R. § 314.50(c) (2001).

106. Rim.net, Injunction Stayed In NTP Inc. vs. RIM Litigation, http://www.rim.net/news/press/2003/pr-05_08_2003.shtml (last visited August 14, 2006).

107. *Id.* For more information on the RIM-NTP dispute, see Kirk Teska, *The Story Behind the BlackBerry Case*, available at <http://www.spectrum.ieee.org/mar06/3087> (last visited March 2006);

108. 35 U.S.C. § 302 (2000).

prior art that was not previously before the examiner, or art that raises a substantial new question of patentability. The process begins when the requester files a request that cites the relevant prior art and explains the relevancy of the cited prior art to each claim for which reexamination is requested.¹⁰⁹ Within three months, the PTO will determine whether there is a substantial new question of patentability of any claim of the relevant patent.¹¹⁰ If the PTO determines that such a question exists, the reexamination will be initiated.¹¹¹ Once initiated, the requestor does not participate in the reexamination proceeding except to file a response to the patent holder's initial opposition.¹¹² Otherwise, the proceedings are conducted entirely *ex parte*.

While an *ex partes* reexamination proceeding does not offer much opportunity for the infringer to participate, initiating such a procedure has benefits that direct litigation does not offer. First, if the PTO decides that any claims of the patent are, in fact, invalid in light of the newly raised substantial question of validity, the PTO will issue a certificate canceling those claims.¹¹³ However, if the PTO does not conclude that the claims are invalid, the requestor is not bound by that decision; it may still contest validity in a subsequent court proceeding.¹¹⁴ Finally, there is no presumption of validity during the reexamination proceedings.¹¹⁵

Of course, there are some fairly major limitations and drawbacks to an *ex parte* reexamination proceeding. In addition to the inability of the requestor to participate in the proceeding to any significant extent, a reexamination proceeding also allows the patentee the opportunity to narrow the scope of their claims, thus avoiding the effects of the prior art that is before the examiner.¹¹⁶ The PTO may also reject the conclusion that the patent is invalid – although if the patentee was forced to narrow the claims in order to avoid prior art, the infringer may still see a benefit. While a court is not bound by the rejection of the potential cause for invalidity, it is evidence that must be

109. *Id.*

110. 35 U.S.C. § 303(a) (2000). Note that the PTO may also initiate a reexamination proceeding *sua sponte*. *Id.*

111. 35 U.S.C. § 304 (2000).

112. *Id.*

113. 35 U.S.C. § 307 (2000). As with a decision rejecting the patentability of a claim in the context of the initial examination, such a finding in a reexamination may be appealed. 35 U.S.C. § 306 (2000).

114. *See In re Etter*, 756 F.2d 852, 852 (Fed. Cir. 1985).

115. *Laitram Corp. v. NEC Corp.*, 952 F.2d 1357, 1360 (Fed. Cir. 1991).

116. 35 U.S.C. § 305 (2000).

considered and increases the burden of proof on the infringer challenging the patent.¹¹⁷ Finally, the “substantial question of validity” is one that is based only on prior art – the authorizing statute says nothing about section 112 invalidity or unenforceability.¹¹⁸

Despite these limitations, *ex partes* reexamination proceedings can provide a low-cost mechanism through which an infringer can “challenge” a particular patent or set of patents. And while the costs to the requestor remain fairly low, the patentee must shoulder the burden of defending its already issued patent.¹¹⁹

2. High Costs for Patentees

On the patentee side, a number of factors can lead to high discovery costs for the patentee. For instance, assertions of inequitable conduct can expand the scope of discovery far beyond the asserted claims themselves, drastically increasing the patentee’s discovery costs, and influencing the patent holder’s willingness to litigate. Similarly, the expanding use of electronic storage media can lead to spiraling discovery costs, not just for the infringer, but also for the patent holder.

Claims that a party engaged in inequitable conduct are routine in modern patent litigation. While inequitable conduct claims tend to fail more often than they are raised,¹²⁰ the discovery costs associated with such a claim do not depend on whether the claim is ultimately successful; all that is required is the ability to make out such a claim. While the Federal Circuit has spoken strongly against the overuse of this type of patent defense,¹²¹ and despite the relative difficulty of

117. See *Custom Accessories, Inc. v. Jeffrey-Allan Indus., Inc.*, 807 F.2d 955, 961 (Fed. Cir. 1986).

118. See 35 U.S.C. § 302 (2000).

119. In addition to the *ex partes* reexamination proceeding, in 1999 Congress created an *inter partes* reexamination mechanism that allowed for greater participation by the requestor. See 35 U.S.C. §§ 311-318 (2000). However, the disadvantages of an *inter partes* reexamination for an accused infringer are fairly high – while the requestor is greatly limited in their ability to present their case, they are also bound by an adverse decision. As a result, *inter partes* reexamination proceedings are a highly disfavored device. See Qin Shi, *Reexamination, Opposition, or Litigation? Legislative Efforts to Create a Post-Grant Patent Quality Control System*, 31 AIPLA Q.J. 433, 446-51 (2003).

120. See *Burlington Indus., Inc. v. Dayco Corp.*, 849 F.2d 1418, 1422 (Fed. Cir. 1988) (“Even after complete testimony the court should find inequitable conduct only if shown by clear and convincing evidence. A *summary judgment* that a reputable attorney has been guilty of inequitable conduct, over his denials, ought to be, and can properly be, rare indeed.”).

121. See *id.* (“[T]he habit of charging inequitable conduct in almost every major patent case has become an absolute plague. Reputable lawyers seem to feel compelled to make the charge against other reputable lawyers on the slenderest grounds, to represent their client’s

proving an inequitable conduct defense, their use today is commonplace.¹²² Based on data on patent decisions published by the University of Houston Law Center, between 2000 and 2004, 168 inequitable conduct decisions were rendered, in which infringers prevailed 53 times.¹²³ These decisions were thus nearly as frequent as adjudications based on obviousness (229), illustrating how frequently inequitable conduct claims are raised.¹²⁴ Moreover, this data simply represents the number of inequitable conduct claims that were actually adjudicated; the number that were pleaded, or raised in interrogatory responses, may actually be much higher.¹²⁵ Inequitable conduct may be an especially tempting claim to make against a patent troll who has engaged in multiple continuations, since behavior within the entire period up until the issuance of the most recent patent could arguably fall within the scope of an inequitable conduct claim.¹²⁶

In contrast with validity defenses, which depend either on what is said on the face of the document (in the case of Section 112 challenges) or on the date of conception and reduction to practice (in the case of anticipation or obviousness), raising the specter of inequitable conduct allows for much broader discovery. For instance, while a patentee may be able to object to producing documents created after the filing date of the patent as not relevant to a Section 102, 103, or 112 defense, inequitable conduct encompasses documents created after the filing date of the patent.¹²⁷ This broadening of the discovery scope increases the costs to the patentees who must respond.¹²⁸

interest adequately, perhaps.”).

122. One analysis found that 75% of inequitable conduct claims that had been made were rejected by the district court either on summary judgment or at trial, suggesting that the current system enables infringers to attack valid patents by alleging inequitable conduct where none exists. Katherine Nolan-Stevaux, *Inequitable Conduct Claims in the 21st Century: Combating the Plague*, 20 BERKELEY TECH. L.J. 147, 163-64 (2005).

123. Patstats.org, Univ. Houston Law Center Decisions 2000 – 2004, available at [http://www.patstats.org/Composite%20Table%20\(2000-2004\).html](http://www.patstats.org/Composite%20Table%20(2000-2004).html).

124. *Id.* For further discussion of these statistics, see Kevin Mack, *Reforming Inequitable Conduct to Improve Patent Quality: Cleansing Unclean Hands*, 21 BERKELEY TECH. L. J. 147, 155-56 (2006).

125. Inequitable conduct, which is a form of fraud, must be pleaded with particularity. See *Advanced Cardiovascular Sys., Inc. v. Medtronic, Inc.*, 41 U.S.P.Q. 2d 1770, 1775 (N.D. Cal. 1996). However, this would not prevent an aggressive litigant from raising an inequitable conduct claim as a basis to gain discovery into the patent holder’s documents.

126. See 37 C.F.R. § 1.56 (2005).

127. See *id.*

128. The high costs of providing discovery when an inequitable conduct claim exists are well recognized by practitioners. See, e.g., Joseph N. Hosteny, *Inequitable Conduct: A Time Waster*, INTELLECTUAL PROPERTY TODAY, August 2000, available at

Another factor that can contribute to high discovery costs for the patentee is the almost universal use of electronic files. Prior to the development of inexpensive, readily available computers, with gigabytes of storage space, most documents existed only in paper form. The use of these electronic files has greatly increased the amount of documents that may need to be produced. For instance, one electronic discovery company estimates that a one gigabyte of Microsoft® Word® files is equivalent to approximately 65,000 paper pages.¹²⁹ Given that an average computer can have a hard drive of 110 gigabytes or more (and a typical server as much as a terabyte or more), one can imagine the potential universe of documents.¹³⁰ In addition, because of the ease in storing electronic documents,¹³¹ many documents are retained because there is no compelling reason to discard them. Consequently, the patentee who must search a mere five or six computers is dealing with a document collection that potentially numbers in the millions of pages. Accordingly, the burdens of document collection and production on each party have become significantly greater, such that the potential scope encompasses an effectively infinite number of documents.¹³² Moreover, this trend of a larger and larger document universe is one that will only increase as stored electronic data continues to grow.¹³³ This will in turn increase the patentee's discovery costs.

Litigation costs are certainly a factor that an infringer may consider when choosing whether to litigate or negotiate in the face of a patent threat. Given their importance, the potential for high

<http://hosteny.com/archive/hosteny%2007-00.pdf#search=%22inequitable%20conduct%20discovery%22> (last visited Sept. 7, 2006).

129. See *How Many Pages in a Gigabyte*, on Applied Discovery's website, available at http://www.lexisnexis.com/applieddiscovery/lawlibrary/whitePapers/ADI_FS_PagesInAGigabyte.pdf (last visited Sept. 7, 2006).

130. For a discussion of the rapid growth of computer storage capabilities, see Chip Walter, *Kryder's Law*, available at <http://www.sciam.com/article.cfm?articleID=000B0C22-0805-12D8-BDFD83414B7F0000&ref=sciam&chanID=sa006> (last visited November 3, 2006).

131. See Matthew M. Neumeier, Brian D. Hansen, and Irinia Y. Dmitrieva, *Paper or Plastic? – The Hunt for Electronic Treasure During Discovery*, 1 MEALY'S LITIGATION REPORT: Discovery 1, 3 (December 2003).

132. *Zubulake v. UBS Warbug*, 91 Fair Empl. Prac. Cas. (BNA) 1574, 1578 (S.D.N.Y. 2003) (noting that "[t]he more information there is to discover, the more expensive it is to discover all the relevant information until, in the end, 'discovery is not just about uncovering the truth, but also about how much of the truth the parties can afford to disinter.'").

133. For a further discussion of the tremendous costs that can potentially be associated with electronic documents, including problems due to increase volume, increased storage sites, and the risks of spoliation, see Kenneth J. Withers, *Computer-Based Discovery in Federal Civil Litigation*, 2000 FED. CTS. L. REV. 2 (2001).

discovery costs for the patentee and low discovery costs for the infringer may impact the infringer's decision.¹³⁴

D. The Price to the Patentee of Losing

In addition to the foregoing benefits from litigating, a firm threatened by a patent troll can gain a substantial economic advantage by litigating. As discussed above in section III, a patent troll has only one real asset: its patent. Through litigation, a threatened infringer can turn the tables on the patentee and threaten the patent troll's own assets – possibly driving the value of the litigation to the infringer below zero. By aggressively challenging the patent troll's sole asset, a target hits the patent troll's most valuable (and only) strength.¹³⁵

A patent troll's ideal strategy is to simply license, and to never litigate.¹³⁶ Litigation carries the serious risk of losing the patent – and correspondingly, not just the profits that could be obtained from the litigating infringer, but the profits that can be obtained from all potential infringers.¹³⁷ This creates a strong incentive for the patentee to avoid litigation, or at least, to only engage in litigation when there is a substantial reward for doing so or it has a high probability of winning.

For instance, consider a patentee who holds a patent that arguably covers five infringers. In any single litigation, the patentee risks having the patent invalidated, thus losing the possibility of

134. It is also important to keep in mind that any effects arising from equal discovery costs – or even imbalanced ones favoring the infringer – will primarily be reaped by the first infringer to litigate against the patentee. Once a patentee has conducted a litigation document search, they can use those documents for subsequent litigations, thus minimizing future discovery costs. Thus, only the first litigant is able to reap the benefits of the shift in discovery costs to a more equal playing field. Subsequent defenders will need to search for and produce documents, while dealing with a patentee whose discovery costs are minimal.

135. See *American Needle & Novelty Co. v. Schuessler Knitting Mills, Inc.*, 379 F.2d 376, 379 (7th Cir. 1967) (“The owner of a patent should have the privilege of making a fair investigation as to the possible infringement of his patent without calling down on his head the undertaking of . . . an expensive and burdensome declaratory judgment suit.”).

136. Chan and Fawcett, *supra* note 2, at 3 (“A patent troll's only goal is to extract quick cash, not to create technology development, partnerships, or cross-licensing opportunities. The business model patent trolls employ is relatively uniform at its most basic level: (1) accuse a company of infringing a patent and offer a license for a royalty on sales; and (2) if the target company does not agree to a license, sue them.”)

137. This high cost of losing the patent has been recognized to create asymmetric risks for the patentee and the infringer, thus making the patentee more risk-averse to trial. See Kimberly Moore, *Judges, Juries, and Patent Cases – An Empirical Peek Inside the Black Box*, 99 MICH. L. REV. 365, 377 (2000). Where the patent is the patentee's sole asset (as in the case of a patent troll), it would follow that a patentee may be even more risk averse, since they would necessarily place a higher relative value on the patent.

asserting the patent against the other four infringers.¹³⁸ At the same time, each infringer merely bears the risk of losing only their own share of the total royalties that the patentee is able to extract.¹³⁹ In this situation, the patentee will have a much greater incentive to win the litigation;¹⁴⁰ at the same time, the patentee also has much more to lose. This can be expressed as:

$$L_p = M$$

$$L_i = M * S_i$$

Where L_p is the value of losing to the patentee, M is the total value of the market, S_i is the percentage market share of the accused infringer, and L_i is value of losing to the accused infringer. If this understanding is correct, L_p should be greater than L_i in all situations other than one where the infringer holds a monopoly. Professors Farrell and Merges use this difference in incentives to argue that a patentee will be more likely to win a lawsuit because of its greater incentive.¹⁴¹ Thus, while the patentee has a greater incentive to win, it correspondingly has a greater incentive to avoid litigation, or to settle the litigation if it has been initiated. While the accused infringer cannot directly access the full value of the patent by winning, instead being limited only to $M_p * S_i$, they can indirectly access that value via the threat of winning. In other words, by initiating litigation, the patentee now has a greatly increased incentive to settle, because their potential loss is far greater than that of the accused infringer.

Despite the possibility of losing the patent, however, there is no reason why a patentee will necessarily have a greater incentive to win a given litigation than the accused infringer. The values each places on a successful outcome of the litigation are independent of one another. There are a number of reasons why the value placed by the patentee is not equal to the full value of all royalties that can be extracted based on that patent.

First, one cannot assume that the value of the patent to the patentee is equal to the total market share that it covers. Rarely is there a situation where a patentee has a single patent in a given market. Rather, a patentee will typically have a plethora of patents,

138. Professors Farrell and Merges give the example of five infringers of equal size. Each will gain only a fifth of the gains from a successful challenge, because each is paying only a fifth of the patentee's total royalties. They conclude that a patentee will thus have five times more incentive to prevail in litigation than any one challenger. Farrell and Merges, *supra* note 3, at 952.

139. *Id.*

140. *Id.*

141. *Id.* at 956.

meaning that the value of a single patent may be quantified as M/n_p , where n is the total number of patents relevant to that market held by the patentee. Given that both n_p and S_i can be variable, it is likely that there may be situations where $M \cdot S_i > M/n_p$. In other words, an individual patent may be worth less to the patentee than the accused infringer's market value. In such a situation, the accused infringer would have a lower potential loss from losing than the patentee.

Moreover, perfect knowledge of valuation on the part of the patentee and the accused infringer is rarely available to the parties. For instance, a patentee may think that their patent is worth more, or less, than it really is, while the accused infringer may overvalue or undervalue their own market share.¹⁴² In such a situation, it would be possible for the patentee to undervalue its own patent, thus causing shifts in the incentive structure.

The future value of the patent must also be reduced by the possibility that a future infringer will challenge the patent and prevail. Indeed, as more and more infringers challenge the patent, the probability that the patent will ultimately be invalidated will rise. If a patentee engages in litigation against a single infringer, its probability of winning is p , where p is a value between 0 and 1. If the patentee is forced to litigate against two infringers in separate litigations, the probability that the patentee will lose becomes $p * p$. As the patentee litigates against more and more infringers, its probability of winning drops substantially. Thus, the total profit of a patentee must be discounted by the probability of each infringer litigating the patent versus the probability of winning each suit. This can substantially lower the value of the patent to the patentee.

Because an infringer can threaten the patent troll's core asset through litigation, the patentee may have a strong disincentive to litigate. However, it does not necessarily follow from this that a patent holder will have a greater incentive to win the litigation than the accused infringer. Nevertheless, by litigating an infringer can attempt to tap into the value of the patent, potentially driving the patentee to settle for a negligible amount.

142. For a discussion of the difficulties in valuing patents, *see, e.g.*, Long, *supra* note 87, at 659-68.

V. A PROPOSED MODEL FOR EVALUATING LITIGATION INCENTIVES

As the discussion in section III demonstrates, there are factors that may encourage litigation on the part of the infringer, and discourage it on the part of the patentee. One way to explore the effects of these factors is to utilize a settlement model. Such models have been widely accepted, both in the context of patent law as well as more generally.¹⁴³ While the model presented below is based on the classic settlement model, it contains a few differences that are particularly important in the context of patent law. First, it takes into account not just the award to the patentee of winning the litigation, but also the cost to the patentee of losing the litigation (particularly, the loss of the patent). In addition, as discussed in section V.B, this model incorporates an additional component: the cost to both the patentee and the infringer of choosing *not* to litigate. Using this model, I demonstrate that the factors discussed above will have one of two effects: a lowering of the settlement price or an increased likelihood that the infringer will choose to litigate, rather than settle.

A. *The Basic Model*

When the possibility of litigation or negotiation between two parties arises, the principle question is what is the value placed by both parties on the litigation.¹⁴⁴ In other words, how much will the first party (in this case, the patentee) take to not litigate, and how much will the second party (in this case, the infringer) be willing to pay to not have to litigate.¹⁴⁵ These two values define a settlement range – in other words, a range of values between which a settlement will occur.¹⁴⁶ If the amount that the patentee is willing to take is less than the amount that the infringer is willing to pay, the parties should be able to come to an arrangement so as to avoid litigation.

On the other hand, if the amount that the patentee is willing to take is greater than the amount that the infringer is willing to pay, the parties will be unable to settle, and litigation will ensue. While a

143. See, e.g. Farrell and Merges, *supra* note 3, at 955-60; see also George L. Priest and Benjamin Klein, *The Selection of Disputes for Litigation*, 13 J. LEGAL STUD. 1, 13 (1984); Samuel Issacharoff, *The Content of Our Casebooks: Why Do Cases Get Litigated*, 29 FLA. ST. U. L. REV. 1265, 1268-69 (2002); Joel Waldfogel, *Reconciling Asymmetric Information and Divergent Expectations Theories of Litigation*, 41 J.L. & Econ. 451, 454-57 (1998).

144. See generally Priest and Klein, *supra* note 143, at 12.

145. See Issacharoff, *supra* note 143, at 1268-69.

146. *Id.*

situation in which the “true” value of the patentee is higher than that of the infringer is probably not realistic,¹⁴⁷ the asymmetric information and divergent expectations theories hold that parties will frequently mis-estimate the true valuation of their position.¹⁴⁸ For instance, if both parties over estimate the value of their positions, the result may be litigation. The narrower the settlement range (i.e.: the closer the patentee and infringer’s settlement points), the more likely litigation is to arise due to incorrect valuation.

We can determine the extent of the settlement range by examining the conditions that establish each party’s expected value (“EV”). The basic equation to describe each party’s expected value is:

$$EV = (p * W) - ((1-p) * L) - C$$

where W is the benefit of winning, C is the cost of litigating, and L is the penalty of losing.¹⁴⁹ The “p” variable represents the probability of winning (and correspondingly, 1-p represents the probability of losing). From the point of view of the patentee, if the amount offered by the infringer is greater than the expected value, the patentee will be willing to settle; if the amount offered is less than the expected value, the patentee would rather litigate, as it can obtain a greater value from litigating than from settling.

147. Standard settlement models do not seriously consider the possibility that the Expected Value of the plaintiff will be greater than that of the defendant; indeed, for such a situation to occur, both parties would need to see a significant benefit from winning that outweighed both parties’ loss from losing. However, as discussed above, it is not necessary that the parties’ Expected Valuations cross for litigation to occur, since parties frequently mis-value their own positions. See Priest and Klein, *supra* note 143, at 13-14.

148. Under the asymmetric information theory, one party knows the probability that the other will win (p), while the other has more limited knowledge. Under the divergent expectations theory, both parties mis-estimate their position. Both situations can lead to litigation even if the true valuation of the parties’ position allows for the existence of a settlement range. For further discussion of these two theories, see Joel Waldfogel, *Reconciling Asymmetric Information and Divergent Expectations Theories of Litigation*, 41 J.L. & ECON. 451, 451-52 (1998).

149. This model differs from a classic settlement model (which is simply $EV = p * W - C$), see Issacharoff, *supra* note 143, at 1268, in that it incorporates the possibility that the plaintiff might see a loss from losing that is independent of their inability to claim the reward. In many areas of litigation a loss factor may be not have a major impact on the Expected Value, as the plaintiff has already suffered the loss, and no further loss is likely to arise from litigating. For instance, in a tort suit, the plaintiff has already suffered the harm, and seeks compensation; a further loss from litigating would not be expected. In the patent context, however, there is a very real possibility that the patentee could lose its patent, and all future revenue that could have been derived from it, if it loses on invalidity grounds. Similarly, as discussed in section IV.A.4, an infringer may actually gain a positive benefit if it wins the litigation, thus providing a “win” component to the defendant-equation.

Because there are two parties, the patentee and the infringer, each with their own Expected Values, we have two separate equations:

$$\begin{aligned} EV_p &= (p * W_p) - ((1-p) * L_p) - C_p \\ EV_i &= (p * L_i) - ((1-p) * W_i) + C_i \end{aligned}$$

where EV_p represents the patentee and EV_i represents the infringer. The equation for the patentee is the amount the patentee is willing to accept to not litigate; the equation for the infringer is the amount that the infringer is willing to pay to avoid litigation.

For the patentee, the W_p is the value of winning the litigation.¹⁵⁰ This is essentially the value it can force the infringer to pay by enforcing its patent. In some cases, this may be the damages it obtains; in others, the amount it can extract if it obtains an injunction.¹⁵¹ Presumably, W_p will equal approximately L_i , or the amount of the penalty to the infringer if it loses the litigation.

C_p represents the costs to the patentee of litigating. These costs can take a variety of forms – attorney’s fees, court charges, etc. L_p is the penalty the patentee must pay if it loses. While the patentee does not have to pay damages if it loses, except in extraordinary circumstances,¹⁵² if the patentee loses, it will suffer future damages – for instance, if the infringer is found not to infringe, future infringers that the patentee may attempt to assert the patent against may be similarly situated. Worse, if the infringer succeeds in having the patent declared invalid, the patentee will lose all future value that it could extract from future infringers, either via litigation or non-litigation licenses of the patent. Thus, for the patentee, L_p refers to the future cost of losing the litigation.

Based upon this background, we now have the following equation for the Expected Value of the patentee:

$$EV_p = (p * W_p) - ((1-p) * L_p) - C_p$$

From this equation, we can deduce several things. First, the higher the benefit of winning, the higher the patentee’s expected value. Similarly, the greater the cost of losing, the lower the expected

150. Keep in mind that the discussion is limited to patent trolls. The only benefit that a patent troll derives from a patent is the value that it can extract from infringers based on that patent. Thus, outside of the value that it can extract by licensing the patent (settling) or enforcing the patent (litigating), it gains nothing else from the patent. Moreover, it gains no ancillary benefits (such as protecting its own market share or product line) from enforcing the patent – only the value that it can actually extract from the infringer.

151. The ability of a patent troll to obtain an injunction has been heavily hampered by the recent *eBay* decision, as discussed below in section VI.

152. *Mathis v. Spears*, 857 F.2d 749, 754 (Fed. Cir. 1988).

value will be.¹⁵³ If the cost of the litigation plus the penalty for losing is high enough, the expected value will be less than zero. Of course, a patentee would presumably be willing to simply avoid litigation altogether, rather than litigate and lose more than it could possibly win, so we can conclude that a patentee will avoid litigation when $0 > (p * W_p) - ((1-p) * L_p) - C_p$.¹⁵⁴

The analysis for the infringer is different, because we are not determining how much value the infringer seeks to extract, but rather how much value it is willing to pay in order to avoid litigation. In order for the infringer to pay the patentee, litigating must not be a better option than settling. The equation for the infringer is as follows:

$$EV_i = (p * L_i) - ((1-p) * W_i) + C_i$$

For the infringer, W_i is the benefit of winning. Unlike the patentee, the infringer obtains no direct benefit from winning. However, as discussed above in section IV.D, the infringer may derive some indirect benefit from winning the litigation. L_i is the penalty for losing the litigation. Unlike the patentee, the only penalty the infringer pays is the value that can be extracted by the patentee. Based on this analysis, the infringer should license when the amount demanded by the patentee is less than $((p * L_i) - ((1-p) * W_i) + C_i)$, and should litigate when the amount demanded by the patentee is more than $((p * L_i) - ((1-p) * W_i) + C_i)$. In other words, the cost of paying for a license must be less than the cost of litigation and the penalty for losing minus the benefit from winning the litigation.¹⁵⁵ Given that the benefit from winning is likely to be fairly small

153. We can assess the effects of probability to some extent. Take, for example, the perfect case. If the patentee has a 100% chance of winning ($p(\text{winning}) = 1$), the analysis is simply $EV_p = W_p - C_p$. If the cost to litigate is 2, the benefit to winning is 10, and the penalty for losing is 100, $S_p = 10$ when the patentee has a perfect chance of winning ($EV_p = W_p(1) - (C_p(2)*p(\text{winning})(1) + L_p(100)*(1-p(\text{winning})(1)))$). Moreover, we can conclude from the perfect situation that, if the benefits for winning are less than the cost of litigating, there would appear to be no reason to litigate.

154. Some scholars have argued that a plaintiff may be able to extract a settlement price even if its expected value is below zero. See Lucian Arye Bebchuk, *A New Theory Concerning the Credibility and Success of Threats to Sue*, 25 J. LEGAL STUD. 1, 23-24 (1996). However, when a patent troll's expected value is negative due to a large potential loss component, such a strategy would be very risky.

155. As with the analysis for the patentee, probability of winning can play a role in the settlement value. If the patentee is extremely likely to win the litigation, the settlement value will be driven down, and the infringer will not be willing to settle, even for a value less than the costs of the litigation. On the other hand, if the infringer is not likely to win, they should be willing to settle for more than the costs of litigation. We can also say that increasing the value of winning to the infringer will drive the settlement value up, while increasing the cost of losing will drive it down.

compared to the cost of losing, an infringer is likely to be willing to pay some positive amount to avoid litigation.

These equations provide us with important information about the patentee and infringer's expected behavior. One such piece of information is the effect of the patentee's potential loss from losing the litigation. The greater the potential loss, the lower the patentee's expected value will go. At the same time, the possibility of a high loss on the part of the patent troll has no effect on the infringer's expected value. Thus, the net effect of the patentee loss component is as follows: the greater the potential loss to the patentee, the wider the settlement range will be, and the more likely the parties will be to settle. However, because this expansion is due to a lower expected value on the part of the patentee, while the infringer's expected value remains unchanged, the effect will drive the settlement price down.

This can be seen by looking at how one factor that can affect the degree of loss, the infringer's size, plays into this analysis. In the case of litigating against an infringer with a small market share, the cost of losing for the patentee will be much greater than the benefit of winning.¹⁵⁶ This is because, by winning, the patentee will only be able to extract a small fraction of the total value of the patent, while by losing, the patentee loses the total value of the patent. In terms of our variables, $W_p < L_p$. This situation can also be described as one where the patentee has a low benefit to winning at a high cost of losing.¹⁵⁷ In such a situation, the patentee has a very low Expected Value (possibly below zero), because the cost of litigating will substantially exceed the benefit of winning. This suggests that there is an economic force countering the increased likelihood of success that a large patentee may have when litigating against a small infringer.¹⁵⁸

156. See Farrell and Merges, *supra* note 3, at 951. Note that if the patentee has multiple patents covering the relevant market, the loss of a single patent may not be a significant loss. See discussion *supra* section IV.D.

157. Returning to our probabilistic analysis, in such a situation, any uncertainty in the ability of a patentee to win will drive the patentee's settlement value significantly down, because the cost of losing will rapidly escalate. Continuing the previous example, if the patentee's probability of winning decreases by merely 0.1, the patentee will go from a settlement point of 8 ($EV_i = W_p(10) * p(\text{winning})(1) - (C_i(2) + L_i(100) * (1-p(\text{winning})(1)))$) to a settlement point of -3 ($EV_i = W_p(10) * p(\text{winning})(.1) - (C_i(2) + L_i(100) * (1-p(\text{winning})(.9)))$).

158. In situations where there is a large potential loss from losing, the patent holder will presumably spend more money on the litigation, thus resulting in a greater probability of winning. See Farrell and Merges, *supra* note 3, at 948-49. The above analysis suggests that, while a large patentee may experience greater success against a small infringer, that success is counterbalanced by the higher risk/reward ratio.

On the other hand, in the case of litigating against an infringer with a relatively large market share, W_p will be much higher relative to L_p (i.e. the cost of losing to the patentee will be approximately equal to the value of winning that particular litigation, since most of the value of the patent lies in the present, rather than the future). Compared to the previous situation, which involved an infringer with a small market share, the patentee will have a higher Expected Value.¹⁵⁹

Using this model, we can see how the other factors discussed in section IV affect the settlement range, thus driving down the likelihood and amount of a settlement. First, any of the factors that make it more likely that the infringer will win, such as tactical benefits, will drive the settlement range as a whole down and make it more likely that the patentee will be willing to settle. As p moves toward 0, the gain to the patentee of winning goes down, and the potential loss rises quickly. At the same time, the infringer's potential loss goes down, and the potential gain from winning goes up. The net effect of this movement is to drive the patent troll's expected value down faster than that of the infringer. If the patent troll's expected value hits zero, it would presumably simply avoid litigation altogether.

Similarly, the ability to "fix" the claim scope through litigation may also drive down the settlement range, by lowering both the patent troll and the infringer's expected values. Under the "fixed claims" scenario, even if the patentee wins, the claim scope will be locked into place, potentially allowing the infringer an opportunity to design around the patent. As a result, the cost of a loss to the infringer will go down, as will the benefit of a win for the patentee. The net effect of this will be to drive down the Expected Valuations for both the infringer and the patentee, thus lowering the settlement range as a whole.

At the same time, other benefits of winning may increase the likelihood of litigation. One such factor is the external benefit that the infringer derives from winning the litigation. For instance, if the infringer is found not to infringe, but the patent is determined to be valid, the infringer will obtain freedom to operate despite the

159. Moreover, the higher W_p is relative to L_p , the more elasticity there is in the probability of winning. For instance, if $p(\text{winning}) = 0.9$ instead of 1.0, and $W_p = 55$, while $L_p = 55$ (i.e.: the patentee can extract 50% of the total value of the patent from the patentee if it wins the litigation, but the future loss will be the remaining 50% of the value if it loses), $EV_i = 42$ ($W_p(55) * p(\text{winning})(0.9) - (C_p(2) + L_p(55)*(1-p(\text{winning})(0.9)))$).

existence of a patent; at the same time, its competitors will remain in the status quo situation, where they could be threatened with the patent.¹⁶⁰ While this factor will drive W_i up, it will not affect L_p . Correspondingly, the settlement range will become narrower, and the tendency of the parties to litigate will increase.

Changes in litigation costs will also affect the amount and likelihood of settlement. The lower the cost to the infringer of litigating, the higher the infringer's expected value will be (i.e.: the less it will be willing to pay to avoid litigation). Because a higher infringer expected value will result in a narrower settlement range, this will make litigation more likely. On the other hand, if the patentee's litigation costs are likely to be high, its expected value will go down, making litigation more likely. In both cases, however, the net effect will be to push the final settlement amount down, by depressing either the top end (infringer's value) or the bottom end (patentee's value) of the range.

As this analysis demonstrates, the incentives for litigating are asymmetric between the infringer and the patentee. Both parties must necessarily take into account both the fixed costs incurred by litigating as well as the probability of a favorable (or unfavorable) outcome. The patentee's decision rests heavily on the relationship between the present value of winning the litigation compared to the future value of the patent (i.e.: the loss incurred by losing the litigation), while the infringer's decision is primarily driven by the potential loss it would incur if it loses the litigation.

B. The Cost of Not Litigating

To this point, the discussion of Expected Values has not taken into account the cost of *not* litigating. Such a cost is one paid by both the patentee and the infringer. For the patentee, if it chooses not to litigate, it reduces the future value of its patent. This is because the future value is dependant in large part on the ability of the patentee to threaten to enforce its patent. If the patentee chooses not to enforce its patent in a given situation, it lessens the threat posed by that patent to other parties. (Think of the boy who cried wolf). Similarly, if the infringer pays up, they are inviting future patentees to threaten them, also hoping for a payoff merely by asserting their patent. As discussed above, it is rarely more advantageous for a patent troll to litigate if it

160. See discussion *supra* section IV.A.4.

can instead license, and patent trolls will flock to infringers who freely pay out.

So the relationship for the patentee becomes:

$$EV = (W_p + N_p) - (C_p + L_p)$$

where N_p is the cost of not litigating. Thus, when the benefit of winning plus the cost of not litigating is greater than the cost of the litigation plus the potential loss from litigating, the patentee's Expected Value will be high.

The same size conclusion holds true for this analysis as it did for the earlier one. For instance, we know that if L_p is small relative to W_p , N_p will also be small relative to W_p . Thus, the patentee will want to litigate if $W_p > C_p$. On the other hand, if L_p is large relative to W_p , N_p could be either small or large relative to W_p . If N_p is large relative to W_p , a patentee will still high settlement point, because they will be willing to litigate even if the potential loss is high. On the other hand, if N_p is small relative to W_p , the settlement point will be low, because a patentee will want to avoid litigation even if it means incurring a small loss in the future value of the patent.

The cost of not litigating also has a similar effect on the analysis with respect to infringers. Rather than

$$EV_i = C_i + (L_i - W_i)$$

the equation should instead be written as:

$$EV_i = (C_i + L_i) - (W_i + N_i)$$

Unlike for the patentee, N_i is completely unrelated to L_i , since L_i is the *present* cost of losing to the infringer (unlike for the patentee, where it represents the *future* cost of losing). However, as with the analysis for the patentee, N_i has a reputational component – in other words, it depends on how future patent trolls will perceive the effect of the infringer having settled.

As for the patentee's future costs of not litigating, we can deduce some information about N_i . In particular, we can conclude that N_i will depend in part on the cost to future patentees to threaten litigation against the infringer. The lower the costs future patentees can expect to pay, the more likely they will be to threaten enforcement litigation. Based on the equation above for optimal settlement point for the patentee, we know that if the costs of litigating go up, the optimal settlement point for a patentee will go down. Thus, by litigating, an infringer generates a reputation that it is willing to force future patentees to incur those costs. By not litigating, an infringer suggests to future patentees that their C_p will be low, thus encouraging them to threaten (or driving up their settlement price). In addition, the

infringer also indicates to future patentees that their patents will not be at risk if they assert a patent threat, thus raising L_p .¹⁶¹

So what have we learned? We've learned that the likelihood and amount of settlement depends not just on the potential award for the patentee and the potential loss to the infringer, but also on the potential loss to the patentee and the potential award for the infringer. For instance, a patentee will favor litigation when the infringer has a relatively large share of the market. On the other hand, a patentee will disfavor litigation when the infringer holds only a relatively small share of the market, because the cost of losing is very high relative to the present value of winning.

At the same time, the future cost of not litigating can also have an impact. For the patentee, if the cost of losing is relatively small compared to the cost of winning, the patentee will still favor litigation over avoiding litigation entirely. However, if the cost of losing is high compared to the cost of winning, whether the patentee favors litigating over doing nothing depends on whether the future cost of not litigating is low or high compared to the loss from losing. If it is high, then the patentee may still favor litigating, but if it is low, the patentee would be better served by doing nothing.

With regard to the infringer, the incentives are somewhat different. While it initially appeared that the settlement point was dependant only on the relationship between the patentee's settlement offer and the infringer's costs of litigating, benefits from winning and present cost of losing, a more nuanced analysis revealed that the future cost of not litigating can also play a major role. A high N_i can drive the infringer to litigate, even if the situation would otherwise suggest a high settlement point for the infringer.

Finally, we can conclude that litigation will occur if $EV_i < EV_p$, while the infringer will pay a license to the patentee if $0 < EV_p < EV_i$. The patentee should leave the infringer alone if $EV_p < 0$, because if the patentee litigates, they stand to lose more than they could possibly gain. This can be illustrated as follows:

161. Note that an infringer gains no additional value by licensing a patent in the present, and then litigating a patent in the future. While it may have incentives to do so that are independent of its prior choices (such as a low cost of losing in situation 1 versus a high cost of losing in situation 2), those incentives do not suggest a reason to hide its future plans to litigate by licensing in situation 1.

Settlement	0	$EV_p \rightarrow$	$\leftarrow EV_i$
Litigation	0	$\leftarrow EV_i$	$EV_p \rightarrow$
Patentee Avoids Litigation		$EV_p \rightarrow 0$	

As the above diagrams demonstrate, when the settlement point of the infringer is higher than that of the patentee, the infringer will settle. On the other hand, when the settlement point of the infringer is lower than that of the patentee, the infringer will litigate.

C. *The Settlement Point Model and the Declaratory Judgment Act*

What if, however, the settlement points for both the patentee and the infringer are below zero? Such a circumstance is illustrated below:

$$\leftarrow EV_i \quad EV_p \rightarrow \quad 0$$

In such a situation, it would not make sense for the patentee to initiate litigation. But what if the infringer chooses to initiate litigation under a mechanism such as the Declaratory Judgment Act?

The most direct mechanism by which a threatened firm can initiate patent litigation is to file a suit seeking a declaratory judgment that its product does not infringe any valid claims of a given patent. These types of actions offer an accused infringer an opportunity to remove the uncertainty caused by a patent threat. In the patent context, actions for a declaratory judgment are based on the general authorizing statute, 28 U.S.C. § 2201 (2000). Thus, the standard requirement for a declaratory judgment action – an actual controversy between interested parties – also applies to suits involving patent questions.¹⁶² However, while there is no special jurisdictional statute for patent declaratory judgment actions, particular rules have been developed about how the “actual case or controversy” element can be met when an infringer brings an action against a patent holder.

Under the Declaratory Judgment Act, federal courts may exercise jurisdiction over a declaratory judgment action only if an

162. B.P. Chemicals Ltd. v. Union Carbide Corp., 4 F.3d 975, 977 (Fed. Cir. 1993) (“A declaratory judgment action may be brought in order to resolve an ‘actual controversy’ between ‘interested’ parties”) (quoting 28 U.S.C. § 2201).

“actual case or controversy” exists between the parties.¹⁶³ As courts have routinely recognized, the declaratory judgment act is not intended to permit advisory opinions on a situation not ripe for litigation.¹⁶⁴ The requirement that a controversy be actual, as opposed to hypothetical, is met if there is a real and substantial dispute between the parties that affects their legal rights and obligations.¹⁶⁵ This ensures that federal courts are litigating real disputes that require judicial resolution.

In the patent context, there are two elements that must be met when evaluating whether an actual controversy exists: a reasonable apprehension and infringing conduct.¹⁶⁶ The burden of establishing the existence of that controversy rests on the party bringing the action.¹⁶⁷ Because the burden of establishing these factors rests on the party bringing the suit, it can be difficult for a threatened infringer to challenge a patent. Moreover, even if the plaintiff can demonstrate the existence of a case or controversy, the court has discretion to decline that jurisdiction.¹⁶⁸

Thus, once a threatened infringer files a suit seeking declaratory relief, it must demonstrate that its case satisfies these two elements. First, the patentee’s conduct must have created on the part of the infringer a reasonable apprehension that the patentee will initiate suit if the infringer continues the allegedly infringing activity.¹⁶⁹ This prong looks to the patentee’s conduct, and requires an objective (rather than subjective) apprehension of suit.¹⁷⁰ Second, the infringer must actually have either engaged in, or be imminently prepared to engage in, the allegedly infringing conduct.¹⁷¹ This analysis is based on the plaintiff’s conduct.¹⁷²

163. 28 U.S.C. § 2201 (2000) (“In a case of actual controversy within its jurisdiction . . . any court of the United States, upon the filing of an appropriate pleading, may declare the rights and other legal relations of any interested party seeking such declaration.”).

164. *B.P. Chemicals*, 4 F.3d at 977; *see also* *Coffman v. Breeze Corps., Inc.*, 323 U.S. 316, 324 (1945) (stating that declaratory judgment actions “may not be made the medium for securing an advisory opinion in a controversy which has not arisen.”).

165. *B.P. Chemicals*, 4 F.3d at 977.

166. *See, e.g., Arrowhead Indus. Water, Inc. v. Ecolchem, Inc.*, 846 F.2d 731, 736 (Fed. Cir. 1988).

167. *Shell Oil Co. v. Amoco Corp.*, 970 F.2d 885, 887 (Fed. Cir. 1992).

168. *Cygnus Therapeutics Sys. v. Alza Corp.*, 92 F.3d 1153, 1159 (Fed. Cir. 1996) (*overruled on other grounds by* *Nobelpharma AB v. Implant Innovations, Inc.*, 141 F.3d 1059 (Fed. Cir. 1998)).

169. *See B.P. Chemicals*, 4 F.3d at 978.

170. *See Arrowhead*, 846 F.2d at 736.

171. *See B.P. Chemicals*, 4 F.3d at 978.

172. *See Arrowhead*, 846 F.2d at 736.

When the patentee is a patent troll, the second prong is likely to be met fairly readily; patent trolls are primarily interested in obtaining revenues from firms that have an established market presence, rather than those that are hoping or seeking to enter the market.¹⁷³ Thus, in most cases involving a patent troll, the plaintiff will already be engaging in the necessary conduct – selling an allegedly infringing product, for example, or using a potentially infringing method. Given that the second prong is likely to be met in such a situation, the primary issue when bringing a declaratory judgment action against a patent troll is whether the patentee's conduct has created a reasonable apprehension of suit.

This inquiry is highly fact-dependant, and oftentimes turns on the specific circumstances in a given situation.¹⁷⁴ A few general rules exist, however. First, a patent threat of some sort must exist. This necessarily requires the existence of a patent¹⁷⁵ and a threat based on that patent.¹⁷⁶ The threat may be an explicit statement of intent to enforce a patent, but it need not be.¹⁷⁷ In the latter case, the totality of the circumstances is analyzed to determine whether a reasonable apprehension exists.¹⁷⁸ The mere existence of a patent, without more, is not enough to create a reasonable apprehension.¹⁷⁹

Complicating the inquiry are the Federal Circuit's views on the apprehension requirement as it relates to licensing negotiations. As a general matter, licensing negotiations do not, in and of themselves, constitute a basis for "reasonable apprehension," nor as a general matter do statements made during those negotiations.¹⁸⁰ Oftentimes, posturing on the part of the patentee during such negotiations is not viewed as an explicit threat of suit.¹⁸¹ For instance, simply asserting

173. As discussed in section III, patent trolls are generally interested in obtaining revenue by enforcing their patents – not in transferring new technology that has value independent of the patent rights.

174. *B.P. Chemicals*, 4 F.3d at 980 (Fed. Cir. 1993) ("There is not always an easy demarcation between a reasonable apprehension on the part of a would-be infringer, and the situation whereby a patent, by its existence, inhibits unauthorized practice of its subject matter. The relationships are rarely as simple as they appear in judicial opinions.").

175. *GAF Building Mat. Corp. v. Elk Corp. of Dallas*, 90 F.3d 479, 482 (Fed. Cir. 1996).

176. *Red Wing Shoe Co. v. Hockerson-Halberstadt Inc.*, 148 F.3d 1355 (Fed. Cir. 1993).

177. *See, e.g., Arrowhead Indus.* 846 F.2d at 736.

178. *Id.*

179. *See id.*

180. *Shell Oil*, 970 F.2d at 888; *Phillips Plastics Corp. v. Kato Hatsujou Kabushiki Kaisha*, 57 F.3d 1051, 1053 (Fed. Cir. 1995).

181. *See West Interactive Corp. v. First Data Res., Inc.*, 972 F.2d 1295, 1297-98 (Fed. Cir. 1992).

that an infringer's activities "fall within" the claims of a patent does not constitute an express charge of infringement.¹⁸² Such statements, or "jawboning," during negotiations do not create a reasonable apprehension.¹⁸³ Moreover, most patentees are sophisticated entities who are aware of the Declaratory Judgment Act; thus, they often use language that is intended to avoid creating a reasonable apprehension.¹⁸⁴ This practice is recognized, however, and courts impose no requirement that certain "magic words" be used for a reasonable apprehension to exist. Thus the inquiry turns on the *substance* of the relationship between the parties.¹⁸⁵ In the event that negotiations break down, a declaratory judgment action can be filed. However, while courts generally follow the "first to file" rule with respect to an earlier filed declaratory judgment action (assuming a controversy exists) and a later filed infringement action, in post-negotiation situations, the declaratory judgment case may be transferred to the jurisdiction where the infringement action is pending.¹⁸⁶

When, as in most cases, there is no explicit threat, courts must determine whether the totality of circumstances demonstrates the existence of a reasonable apprehension.¹⁸⁷ Here, the focus is on the behavior of the patentee, both towards the infringer as well as third parties. For instance, demonstrating a willingness to enforce the patent may favor the finding of a reasonable apprehension.¹⁸⁸ A patentee is not required to stand still while the patentee chooses its victims, picking them off one by one at its leisure.¹⁸⁹ Whether patent

182. *Shell Oil*, 970 F.2d at 888.

183. *Id.* at 889.

184. *EMC Corp. v. Norand Corp.*, 89 F.3d 807, 812 (Fed. Cir. 1996).

185. *See Arrowhead*, 846 F.2d at 736 (stating that, in the absence of an express charge, the court "must consider the 'totality of the circumstances' in determining whether that conduct" created a reasonable apprehension that the patentee will initiate suit.).

186. *Genentech, Inc. v. Eli Lilly & Co.*, 998 F.2d 931, 937-38 (Fed. Cir. 1993), *overruled on other grounds by* *Wilton v. Seven Falls Co.*, 515 U.S. 277, 289 (1995); *Holmes Group, Inc. v. Hamilton Beach/Proctor Silex, Inc.*, 249 F. Supp. 2d 12, 16 (D. Mass. 2002); *Kleinerman v. Luxtron Corp.*, 107 F. Supp. 2d 122, 124-25 (D. Mass. 2000). *Compare* *Holmes Group*, 249 F. Supp. 2d at 16 (acknowledging *Kleinerman* as stating the applicable rule for patent cases, but finding that the rule is not applicable where the accused infringer, rather than engaging in licensing discussions with patentee, merely denied liability and immediately filed declaratory relief action.); *see also EMC Corp.*, 89 F.3d at 814; *but see Russell Corp. v. Sara Lee Corp.*, 129 F. Supp. 2d 1165, 1168 (N.D. Ill. 2001).

187. *Arrowhead Indus. Water, Inc. v. Ecolochem, Inc.*, 846 F.2d 731, 737-38 (Fed. Cir. 1988).

188. *See Goodyear Tire & Rubber Co. v. Releasomers Inc.*, 824 F.2d 953, 955-56 (Fed. Cir. 1987).

189. *Arrowhead*, 846 F.2d at 738. In *Arrowhead*, the Federal Circuit described the

trolls are targeting the market as a whole, or are instead focusing on a single infringer, the core concept is the same: it is the threat of enforcement action that motivates the infringer to act. Such a situation may push the court closer to finding that jurisdiction exists in a declaratory judgment action.¹⁹⁰

When the requirements for a declaratory judgment action are met, an infringer may affirmatively choose to initiate litigation against a patent troll if it finds itself in a situation where both it and the patentee's settlement points are below zero. By litigating against the troll in this situation, the infringer forces the patentee to take some action to affirmatively remove the threat of suit – provide a covenant not to sue, for example. This eliminates the uncertainty for the infringer that would have existed if it had simply remained in the market.¹⁹¹

As discussed above, litigation need not be something that a threatened infringer is forced into by a patentee. Instead, it can be a highly effective weapon against a patent troll. By litigating, an accused infringer can preclude the patentee from capturing not just the value attributable to the accused infringer, but also the value that the patent holder might be able to obtain from other potential infringers. This is because patent litigation is not one sided – both parties have the potential to lose value. By threatening the value that the patentee can extract from third parties by putting the validity of a patent in play, a threatened infringer may be able to force the patent holder to settle for a minimal amount.

Declaratory Judgment Act as enabling a test of the validity and infringement of patents that are being used merely as “scarecrows” and “extra-judicial patent enforcement,” where “a patent owner engages in a *danse macabre*, brandishing a Democlean threat with a sheathed sword.” *Arrowhead Indus.*, 846 F.2d at 734-35 & n.4.

190. It should also be recognized that an infringer may be able to achieve its end goal – forcing litigation – by filing a declaratory judgment action even if the action is ultimately transferred or dismissed. Filing an action now forces the patentee to make a choice – engage in litigation or remove the threat of its patent.

191. The possibilities for proactive infringer initiated litigation can be expanded if a more liberal reading of the requirements for declaratory judgment, such as that proposed by professor Dolak, were adopted. Lisa A. Dolak, *Declaratory Judgment Jurisdiction in Patent Cases: Restoring the Balance Between the Patentee and the Accused Infringer*, 38 B.C. L. REV. 903, 944-48 (1997). Under such circumstances, infringers would be further encouraged to bring suit against patentees with a low settlement point so as to force the patentee to provide the infringer with some sort of assurance that eliminated the patent threat.

VI. EBAY AND THE WEAKENING OF INJUNCTIVE RELIEF

One of the patent troll's most potent weapons for the past decade has been its ability to raise the potential litigation loss to the infringer through the threat of an injunction. The benefit of this to the patentee is that it raises the infringer's settlement point – in other words, the infringer will be willing to pay even more to remove the patent threat. The recent Supreme Court decision in *eBay v. MercExchange* drastically reduced the ability of a patent troll to obtain a permanent injunction against an infringer. In terms of the model discussed in section V, this will necessarily drive down L_i , the potential cost to the infringer of losing. This produces two effects. First, it lowers both the patentee and infringer's settlement points, resulting in lower (but not necessarily less frequent) licenses. Second, it has the potential to drive the patent troll's settlement point below zero, reducing the economic viability of litigation.

MercExchange is an invention holding company that holds several patents on e-commerce technology.¹⁹² It sued eBay, a leading online auction site, for infringing its patents with its "Buy It Now" feature, which allows for instantaneous sales of product between buyer and seller (thus bypassing the remainder of the auction period).¹⁹³ A jury found that two of the patents were valid and infringed, and the district court entered an award of damages.¹⁹⁴ The district court, however, refused to impose a permanent injunction, concluding that based on the four-factor equitable test set forth in *Weinberger v. Romero-Barcelo*¹⁹⁵ a permanent injunction would be inappropriate in this case.¹⁹⁶

On appeal, Judge Bryson, writing for the panel, reversed the district court's refusal to enter an injunction. In the opinion, Judge Bryson noted that "[b]ecause the 'right to exclude recognized in a patent is but the essence of the concept of property,' the general rule is that a permanent injunction will issue once infringement and validity have been adjudged,"¹⁹⁷ outside of such exceptional circumstances as "to protect public health."¹⁹⁸ Since there was no

192. See *High Court Directs Lower Courts to Apply 4-Part Equitable Test for Issuing Injunctions*, 72 PAT. TRADEMARK & COPYRIGHT J., (BNA) 1770 at 50 (May 19, 2006).

193. *Id.*

194. *Id.*

195. *Weinberger v. Romero-Barcelo*, 456 U.S. 305 (1982).

196. See *MercExchange, L.L.C., v. eBay, Inc.*, 401 F.3d 1323, 1326 (Fed. Cir. 2005).

197. See *MercExchange*, 401 F.3d at 1338 (quoting *Richardson v. Suzuki Motor Co. Ltd.*, 868 F.2d 1266, 1246-47 (Fed. Cir. 1989).

198. *Id.*

evidence that this was an “exceptional case,” the Federal Circuit’s own precedent dictated that a permanent injunction was necessary.¹⁹⁹ eBay petitioned the Supreme Court for a writ of certiorari on this issue, which the Court granted.²⁰⁰

In a major shift in patent law, a unanimous Supreme Court reversed the Federal Circuit’s holding that a permanent injunction must issue in this case. In doing so, the Court specifically rejected the position that “an injunction should be denied only in the ‘unusual’ case, under ‘exceptional circumstances’ and in ‘rare instances. . .to protect the public interest.’”²⁰¹ Rather, it was instead necessary to consider the four traditional equitable factors, and apply them to each specific matter before the court.²⁰²

While the Court steered away from stating any rules of general applicability, including as they related to the ability of patent trolls to obtain injunctive relief, four justices joined together to pointedly condemn patent troll-like behavior. Writing for these justices, Justice Kennedy described an industry that had arisen, “in which firms use patents not as a basis for producing and selling goods, but, instead, primarily for obtaining licensing fees.”²⁰³ These firms could use the threat of an injunction to obtain “exorbitant fees” from companies that sought to practice their patents.²⁰⁴ In such a context, Kennedy wrote, “legal damages may well be sufficient to compensate for the infringement and an injunction may not serve the public interest.”²⁰⁵ Thus, while the Court in eBay did not outright forbid the issuance of injunctions when the patentee was a patent troll, it strongly hinted that injunctions in such cases would be highly disfavored.

The ripples from *eBay* are still being felt, and it will be years before the effects are fully sorted out.²⁰⁶ However, it is clear that the

199. See *id.* at 1339.

200. Mark Vorder-Bruegge Jr., *Injunctive Relief for Patent Infringement – A New Era?*, 53-JUL Fed. Law. 14, 14 (July 2006).

201. See *MercExchange*, 126 S.Ct. at 1841.

202. *Id.*

203. *Id.* at 1842 (Kennedy, J., concurring).

204. *Id.*

205. *Id.*

206. For instance, district courts are now grappling with the issue of whether there is still a presumption of irreparable harm once infringement and validity have been found. Compare *z4 Technologies, Inc. v. Microsoft Corp.*, 434 F. Supp. 2d 437, 440 (E.D. Tex. 2006) with *Christiana Inds. Inc. v. Empire Electronics, Inc.*, 2006 U.S. Dist. LEXIS 54210, at *5 (E. D. Mich. 2006) (holding that the presumption continues to exist, at least in the context of preliminary injunctions). For another discussion of the effects of eBay, see Mark Vorder-Bruegge Jr., *Injunctive Relief for Patent Infringement – A New Era?*, 53-JUL Fed. Law. 14, 14

general rule that an injunction will almost invariably issue on a finding of infringement and validity no longer exists. It is also clear that the ability of a patentee to obtain a permanent injunction – especially when that patentee is a troll – has been substantially lessened.

Regardless of *eBay*'s other effects, it will necessarily limit the ability of patent trolls to obtain injunctions, thus driving down the amount they can demand for a license in lieu of litigation. In terms of the model presented in this paper, this will drive down the potential litigation loss for the infringer (L_i). As L_i drops, the amount the infringer would be willing to pay to avoid litigation will also drop – thus increasing the infringer's willingness to litigate in the face of a patent threat. At the same time, the value of victory for the patentee (W_p) will also drop, since even if there is a finding of both infringement and validity, it will be unlikely to obtain an injunction. As W_p drops, the amount that the patentee is willing to accept to license the patent will fall, although not necessarily at the same rate as the infringer's settlement point. This leads to two conclusions. First, because the settlement points for both the infringer and the patentee will drop as a result of *eBay*, there will not necessarily be change in the frequency of litigation. The amount infringers will be willing to pay will be smaller, which suggests that they would be more willing to litigate. However, the license amounts sought by patentees will also be smaller – thus making them more willing to give out bargain basement licenses. Consequently, patent troll-infringer litigation is unlikely to decline.

On the other hand, because the S_p for the patent trolls will drop as a result of *eBay*, the model presented herein suggests that there will be more situations in which the settlement point for the patent troll is below zero. In such cases, it is not rational for a troll to litigate, because it stands to lose more from the litigation than it can gain. The more often S_p falls below zero for a given patent troll, the less often it will be able to make a viable demand that an infringer license its patents.

VII. CONCLUSION

In this Article, I have sought to demonstrate that there are a number of benefits that an infringer can obtain if it chooses to litigate against a patent troll. Besides the direct benefits that the infringer can

derive from litigating, the infringer may also benefit from the valuation placed on the litigation result by the patentee, which can play a key role in determining when litigation will take place. For the infringer who seeks to litigate, advantageous options such as a declaratory judgment action may be available. Their use, however, will necessarily depend on the particular circumstances of the infringer's position. Given this situation, the infringer's threat of litigation provides a counterbalancing force to the patent troll's ability to extract a license, and plays a major role in forcing low price settlements with patent trolls.